The New Geologic Epoch

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Member Artists Confronting the Geologic, 1960s to 2016
Patricia Watts

Patrica Watts is the founder and curator of ecoartspace. She has curated and organized over forty exhibitions focused on ecological issues since the late 1990s, working with hundreds of artists internationally. It is her vision that these artists can forge new ways of thinking about the role of art while creating work that transforms themselves and the places where they live. Watts lives and works in the Rio Grande Rift Valley, Intermontane Plateaus (NM, USA).

↑ Richard Bowman, *Rock and Sun*, 1947, oil on canvas, 35 × 35 inches. Richard Bowman Estate
↓ Janet Culbertson, *Repository*, 1989, oil, iridescent pigments on rag paper, 29 × 41 inches

"To the human eye and brain, the rock appears to be one of the most stable of objects. But is it? Is it not here and now in an atomic state? Therein we may say that it is kinetic at the same time that it is stable."
—Richard Bowman

In 2018, I wrote a monograph on a painter from the San Francisco Bay Area, Richard Bowman (1918–2001), who was deeply fascinated with the dynamic relationship between "the rock and the sun." In 1943, he traveled to Erongarícuaro, in the State of Michoacán, Mexico, where he experienced a surging cone and expanding lava field, which literally formed from a corn field. This geologic event that made headlines around the world became Parícutin Volcano. Bowman remembered, "The idea evolved very slowly over the next month or so about the opposing forces of energy, i.e., the locked, overt energy in matter, and the overt, free energy of the sun…I was beginning to perceive physical reality in terms of these tremendous atomic forces, a sort of interpenetration of energy and matter."[1] The artist went on to visually express his concept of the relationship between the earth and the cosmos, depicting an invisible energy with fluorescent paints in abstracted forms, until his death in 2001.

For painter Janet Culbertson, as a small child in the early 1940s, while canoeing with her father through what she thought was a pristine river in Pennsylvania, she was startled to see crusty mine tailings and dead fish floating by in an orange, sulfuric stew. Culbertson was born in an era and place that was the epicenter for coal mining. She states, "Pools of gray sludge hid the mine tailings long before companies were forced to clean up their destructive habits. Coal dust sifted into our homes and created allergies, yearly bronchitis for children, and health issues for all." Since the late 1960s, Culbertson has painted the beauty and degradation of nature, from the dark volcanic islands of the Galapagos to landscapes closer to home. She uses iridescent pigments and thick oils to recreate the surreal, dense glow of pollution and a collage of detritus to present a tactile and layered expression of Earth's deterioration at the hands of what she refers to as the (Hu)Man.[2]

1 Patricia Watts, *Radiant Abstractions: Richard Bowman*, (Redwood City, CA: Watts Art Publications, 2018), 32.

2 Janet Culbertson, artist statement submitted to ecoartspace for *The New Geologic Epoch*, May 30, 2023.

While in graduate school at the San Francisco Art Institute in the late 1970s, Eve Andrée Laramée would drive down to Foster City, where ocean water flows into the Bay and gets trapped, evaporates, and leaves large quantities of salt behind. The artist collected the salt and noticed after several weeks that a piece of copper wire mixed in with the salt began corroding, turning a blue-green color. Her reaction was to see if she could create an evaporation pit in her studio to replicate the chemical reactions of decomposition, evaporation and crystallization. Laramée combined a range of salts, from table salt to sea salt, then added a copper powder, and water. While watching her science experiment turn green, she deduced that corrosion is entropy and crystallization is order.

Laramée was later invited by the Albuquerque Museum in New Mexico in 1983 to present a solo exhibition. Titled *Venusian Lagoons*, four large-scale floor installations, each zig-zag-shaped pools, were filled with varying levels of salt, water, powered and shaved metals, and a range of glass and stones including slate and limestone. The works evolved like a clock at different evaporative scales. In the exhibition catalog, Laramée included documentation of early experimentations. The series eventually concluded with *River of Stone*, made in 1989, which was exhibited at the New Museum in New York, and the following year, in the traveling exhibition *Revered Earth* initiated by the Center for Contemporary Art in Santa Fe, New Mexico.[3]

In the 1970s, Steven Siegel began thinking about and exploring the notion of the Anthropocene, years before the term was invented. He was asking questions such as: How do our individual lives fit within the short history of our species? Where does our species fit in deep time? What are the things that only our species is capable of doing to affect everything else that is here? Two years after reading *Basin and Range* by John McPhee in 1981, Siegel traveled to Scotland to visit the site where geologist Dr. James Hutton made his discovery that the earth is continually being formed and that the oldest rocks are made up of materials

3 Eve Andrée Laramée, V*enusian Lagoons*, Albuquerque Museum, June 5–September 4, 1983. River of Stone, created for the exhibition *Strange Attractors: Signs of Chaos* at the New Museum, New York, 1989, and included in a traveling exhibition *Revered Earth*, initiated by the Center for Contemporary Art in Santa Fe, New Mexico, 1990, curated by Dominique Mazeud.

↑ Eve André Laramée, *River of Stone*, 1989, copper, water, salt, glass and mica. Included in *Strange Attractors: Signs of Chaos*, New Museum of Contemporary Art, New York
↓ Steven Siegel, *New Geology 3*, 1992, paper, flora, 5 × 10 × 10 inches

↑ Ulrike Arnold, *Utah 3*, 1992, outdoor studio with pigment samples

↓ Meridel Rubenstein, *The Big Shell/Brains in Nature*, c. 1993, shelf with conch shell, tree root, birds nest with robin eggs, brain coral, sea sponge, and nuclear trigger, flanked by two photographs, *Postive and Negative Cloud*, and *The Big Shell*, photowork palladium and steel, with text

furnished from the ruins of former continents.[4] The experience resonated with Siegel and is reflected in his outdoor sculptures made with newspaper, which he first attempted for the Snug Harbor Sculpture Festival on Staten Island in New York in 1990. Staten Island is home to Freshkills Park, once the world's largest landfill, with tons of refuse buried under mounds of earth. The location prompted Siegel to note that humans were creating "new geology" from waste, which inspired his first outdoor site sculptures that incorporated stacked layers of newspapers titled *New Geology #1*, 1990, and *New Geology #2*, 1992.

German artist Ulrike Arnold purchased ten acres of land in the late 1990s in Northern Arizona, east of Flagstaff near Roden Crater, where she had a Hogan built for her by the Diné, a sacred Indigenous home. Each year since she has spent six months in the Southwest gathering rocks and sands to ground and make paintings with in-situ. Arnold mixes these materials with a binder to paint non-objective abstractions. She also adds meteorite dust collected by meteorite hunters. Arnold does not depict landscapes in the traditional sense with her work; she expresses the pigments and textures of the geological forms that surround us. Her mark-making blends with the material, merging the human and non-human worlds. Arnold's magna opus is her work *One World Painting*, in which she used a wide range of color pigments from trips made to five continents, collected over the past forty years, minerals that glimmer, and mud that provides a wealth of shades: reds, blues, yellows and greens. Her paintings are a dialogue of Earth between salt and sands from deserts, volcanoes, prehistoric caves, rock formations and river beds.

For her in-depth, multi-year project titled *Critical Mass* (1989–93), photographer Meridel Rubenstein made the installation titled *The Big Shell/Brains in Nature*. For this work, she recounts a story told to her by the curator of ethnology, Edmund J. Ladd (Zuni Pueblo), about the Zuni's weapon of "ultimate destruction." In the late 1680s, the Zuni assembled the Big Shell Society, who repulsed Spanish invaders by using a conch

4 Steven Seigel traveled to Scotland in 1983, which was sponsored by the New York Foundation for the Arts. Dr. James Hutton (1726–1797) was a Scottish farmer and naturalist who wrote *The Theory of the Earth* (1978); considered the father of modern geology.

shell to "pierce the hearts of aggressors," producing a terrifying sound. Rubenstein gathered a group of objects that reminded her of a brain—nature's brain, including a tree root, conch shell, brain coral, and a sea sponge—which were placed on a shelf alongside a nuclear trigger used in a submarine in the Bikini Islands. The objects were placed under two photographs of a positive and a negative of a cloud, suggesting the ever-present possibility of nuclear incursion. What might appear unintelligent in nature can hold a natural intelligence, a knowledge that Indigenous people have carried with them for thousands of years. Rubenstein's focus on the making of the first atomic bomb in the mid-1940s, on radioactivity and its chemical effects on humans and non-humans, has helped her assess her own anthropocentric behavior and has inspired her to evolve from being a photographer of single images to an ecological artist, doing restoration of nature as art.[5]

"The site has strange but beautiful aspects: mountainous heaps of red dog slag, long channels of bright mustard-colored yellow boy. This toxic beauty is the guise of inheriting a post-extractive heritage, the look of a battered earth that will not give up."
—Stacy Levy

For ten years, Stacy Levy worked with a cross-disciplinary team from 1995 to 2004, including a landscape architect, historian, and hydrogeologist, to remediate toxic runoff from an abandoned mining site, Mine No. 6 along Blacklick Creek in southwestern Pennsylvania. The multi-year project, titled AMD & ART, was a collaboration with the local community to design a water treatment park including a constructed "Ghost Wetlands," with salvaged derelict mining structures, and a "Litmus Garden," with basins of plants rimmed with trees to filter the toxic runoff—all while providing an amenity for outdoor recreation, including hiking and biking.

Deep below the forest floor in this region is a geologic maze of rooms and hallways where coal has been extracted. When it rains, the water flows along the coal-flecked walls, steeping a cocktail of acidic liquid that

5 Meridel Rubenstein, The Big Shell for Critical Mass series, taped conversation with Edmund J. Ladd, curator of ethnology, laboratory of anthropology, at the Museum of Indian Arts and Culture, Santa Fe, New Mexico, recorded June 1993.

Stacy Levy, *AMD & Art*, 1995–1998, construction completed
2004, 40 acre floodplain

flows into nearby streams and rivers. The transfer of heavy metals from rocks to waterways from mines creates an acidic enviroment that abolishes the opportunity for life to exist downstream. The extraction industry never addressed the byproducts in the aftermath of mining, leaving the Office of Surface Mining, a branch of the US Department of the Interior, to figure out how to reclaim or heal contaminated sites and pay for them. The Vintondale Reclamation Park demonstrates that effective ecological art projects require intense collaboration with other disciplines, something an artist like Levy, trained in urban forestry restoration, could do to address the mammoth legacy of geologic extraction.[6]

"After water, concrete is the second most used substance in the world… it is the most important material on the planet where a colossal 30 billion tons are used each year and (whose production) accounted for 8% of all greenhouse gases in 2021."
—Lenore Malen

In 2001, Lenore Malen staged two performative works in limestone quarries—first in upstate New York and in the summer near Giverny, France. In New York, she worked with students who performed inside a quarry pit, literally standing in lime-green water. The artist described it as "a non-directed thought experiment in embodied knowledge and deep time." In France, while doing a Terra Residency Fellowship, Malen found an abandoned quarry and invited dancers from her cohort to engage with the limestone while she photographed them. One dancer sustained a cut while climbing the rocks, which Malen felt was symbolic of the dangerous consequences of extraction. She was initially drawn to the spiritual energy that radiated from the limestone and the fundamental beauty of the immense mounds of white powder produced. These performative works, along with the events surrounding 9/11 that year, inspired an otherworldly response that also informed Malen's decade-long project The New Society for Universal Harmony, 1999–2008, a fictional utopia presented through installations of photographs, video and text.[7]

6 Collaborators on AMD&Art project included artist Stacy Levy, landscape architect Julie Bargmann, historian T. Allan Comp, and hydrogeologist Robert Deason. The project was initated by Comp who applied for the grants that funded the project, through the nonprofit AMD&Art.

Lenore Malen, *Quarry*, 2001, photograph, documentation of performative work, in the vicinity of Giverny, France

Mary Mattingly, *Colbalt: A Silence Contained for Years*, 2016, chromogenic dye coupler print, 30 × 30 Inches

"By default, artists utilizing mass produced objects continually create the extractive aesthetic. In a transitional aesthetic, art supports human and other forms of life often exploited through extraction. Rather than fulfilling an extractive aesthetic, can ecosystems be reconstructed without overreach but through regenerative acts?"
—Mary Mattingly

For several years leading up to her installation *Colbalt* in 2016, Mary Mattingly did deep research into the history of mining the mineral that produces the color blue—used in art making dating back to pottery painted in Egypt in the 14th century b.c.e. As a photographer, Mattingly was concerned since the mineral is extracted for essential photography gear including batteries, sensor components, and the actual lens of the artists' Hasselblad camera. As she deconstructed her medium, realizing that visual technologies are embedded in systems of violence through socio-ecological extraction, Mattingly mapped cobalt's commodity chains to document mining sites in an effort to expand public knowledge. Her research led her to the Central African Republic of Congo and its Copperbelt, which provides the world with 63% of the current global supply of cobalt. In the US, the mineral is classified as strategic and the US military is the largest buyer in the world of pure cobalt—used in weapons and alloyed steel that can withstand intense heat.

Mattingly has long sought to de-alienate objects through her deep research into how objects are made and what resources are needed to make them, which she sees as a ritual to illuminate the complex tragedies embedded in objects. Her Colbalt series photographs are still lifes depicting an arrangement of objects that contain the element, made to illuminate the extractive aesthetics of art making and the slow violence in human labor and environmental destruction. Mattingly does not deny that her work is bound to what she renounces and that there are many conflicting realities of living in a modern world.[8]

7 Lenore Malen, in phone conversation, December 9, 2023, in emails, and in artist statement submitted to ecoartspace for *The New Geologic Epoch*, May 19, 2023. *(Quarry) What Really Exists*, 2001, was performed and filmed during Yaddo residency, Albany, New York, June 2001, at nearby quarry, footage edited by Malen around the time of 9/11, and again in 2012 for an approximately 10 minute video presentation included in the group exhibition, *The Herd Remorse*, at Lesley Heller Gallery, New York City, curated by Malen.

8 Mary Mattingly, "Colbalt Aesthetics," CSPA Quarterly, no. 38 (2022): 20–31.

In 2012, Land Artist Michael Heizer had a 340-ton granite megalith transported from a rock quarry in Riverside County, 105 miles west to the Los Angeles County Museum, over eleven nights, and crossing four counties and twenty-two cities. *Levitated Mass*, conceived by the artist in 1969, was one of the largest megaliths to have moved since ancient times. Eleven years later, a 28-ton red Siouxan quartzite boulder, historically known as "I" zhúje 'waxóbe," was rematriated on August 30, 2023, moving it from Lawrence, Kansas, to the Kaw Nation near Council Grove. Almost a century ago, a community of colonial white settlers moved the sacred rock to Lawrence and used it as a monument to honor the local settlers with a large plaque attached. The rock had significant cultural and spiritual meaning for the Kaw Nation as a natural marker and a site for prayer for Indigenous people. In 2020, the Kaw Nation submitted a formal request to the city to return the boulder, and earlier this year, the Mellon Foundation granted $5 million to make the project possible, which will include educational exhibits. City leaders in Lawrence made a formal apology to the Kaw Nation.

Human engagement with the land and the non-human world has primarily been a resource based relationship, especially for non-indigneous people. Empires have been built on mining minerals. Today we see where endless extraction has led us, and it's a scary place for 7 billion humans and counting. Shifting baselines, where we assimilate to the new normal, forgetting what was before that we have lost, have fooled us into thinking we are fine. Maybe it's a survival mechanism, or maybe it's denial, or both. Presenting this online exhibition + book is meant to acknowledge that the earth is a living being and that our interactions with this sphere of geological forms, materials that originated from the cosmos, can be seen as our relatives, which we have cut into and scarred almost beyond recognition.

I would like to thank the almost 200 artists who applied to the call and congratulate the artists who were selected. A special thanks to Mary Mattingly for her thoughtful attention in selecting a sensitive range of geologic works. I would also like to thank Tyler Owens and Dexin Chen, the book designers, for their vision presenting entangled groupings of text and images. This year we had several essays submitted, and we hope that you will enjoy reading them and considering the deep dive presented in *The New Geologic Epoch*.

Jurors Statement
Mary Mattingly

Mary Mattingly is an interdisciplinary artist committed to storytelling through public art, with a focus on imagined futures. She founded Swale, an edible landscape on a public barge in NYC, and has worked on recent projects such as Liminal Lacrimosa in Glacier National Park and Public Water with + More Art in Brooklyn. Mattingly has received grants from foundations such as the James L. Knight Foundation and has been featured in various documentaries and publications, including Art21 and The New York Times. She was recently awarded a 2023 Guggenheim Fellowship in Visual Arts, and in 2022, a monograph of Mattingly's work titled "What Happens After," was published by the Anchorage Museum and Hirmer.

"The Anthropocene is part of geologic time. Formalizing it precisely will help determine its meaning and use in all sciences and other academic disciplines. The end of a relatively stable epoch in Earth's history, the Holocene, will thus be recognized."
—Alejandro Cearreta, co-author of the Anthropocene Curriculum (2013-22)

Humanity possesses an unparalleled capacity to mold, reshape, and at times, devastate ecosystems that health and well-being depend on. The prevailing narratives of advancement, expansion, and individualism have fueled harmful behaviors propelling what has been called the Anthropocene era. Conversely, alternative narratives challenge the ideologies in power, advocating for more sustainable and equitable manners of coexisting with the planet.

The artworks depicted in The New Geologic Epoch delve into intricate power dynamics that locked many people into participating in harmful systems, as well as capacities for action that help envision larger alternatives. They underscore how certain factions and industries have disproportionately contributed to the defining traits of this time, including unrestrained resource extraction, the destruction of habitats, of clean water, and the pervasive pollution that has prolonged social and environmental injustices in areas often called a sacrifice zone, affecting marginalized communities and the natural world. A report by the United Nations in 2022 highlighted that millions of people globally inhabit pollution sacrifice zones used for heavy industry and mining. It should be recognized that disruptions in one corner of the globe send reverberations throughout the entirety of the planet.

Many of these artworks ask viewers to bear witness to landscape transformations, industrial waste, rising sea levels, and shifts in climate. They also impart important reminders that compassion and interdependencies define human relations with plants, animals, air, water, and soils. Some works help shed light on a foundation for interactions that are more sustainable and harmonious, from the substances utilized to make the work to the underlying messages, they evoke contemplation, responsibility, and a dedication to cultivating relationships rooted in reciprocity.

The Plantationocene Monument
Elinna Fabelholm

A Traveler's Guide to the Yearly Multispecies Heritage & Reconnection Ceremony at Gypsum Island, Sweden, September, 2049 *Written by Janna Holmstedt and Malin Lobell of (p)Art of Biomass, in collaboration with Eléonore Fauré, researcher at Lund University under the pseudonym Elinna Fabelholm. A contribution to a fictive tourist guide to Skåne by the Climaginaries network.

What meets my eyes on this sunny day in early September is a green and flowering island with glimmering ponds and massive windmills beating the wind. They fill the air with a slow and steady beat. Among the buzzing insects and screeching birds, it's hard to believe that beneath a thin layer of soil, more than ten metres of white, hard phosphogypsum extends down into the sea, a material testimony of the Swedish city of Landskrona's past as a centre for fertiliser production. This island exists because synthetic fertilisers exist. In the by-product phosphogypsum, naturally occurring heavy metals have accumulated, together with fluoride, radon and high levels of phosphate. Despite its distressing history as a deposit for polluted waste—the construction began in 1978—the artificial island locally known as Gipsön has today become a site so popular that the number of visitors needs to be regulated. How come this toxic dump, measuring approximately 36 hectares, has attracted such widespread attention and become a ceremonial site gathering people from near and far in a yearly celebration of multispecies heritages and futures? Sometimes, unexpected alliances occur around a common cause and that is precisely what happened on Gipsön. Let's rewind.

From toxic dump to ceremonial site for mourning and celebration. When the chemical industry, once responsible for the dump and for restoring the site, attempted to rename Gipsön the Wind Island due to the many windmills erected in the 1990s, in the hope of overwriting its toxic legacy with promises for a greener future, it backfired. Instead, it has become an important site for mourning and grief among the Slow Carers. This growing movement of people, moved by a belief that no quick techno-fixes can mend that which has been broken, attend to wounded landscapes through an ethics of slow care in the name of multispecies flourishing. Also, the Spotlighters—a movement emerging in the mid 2020s of fresh graduates from high school travelling to what has become commonly known as shadow places, these ignored sites of social and ecological exploitation in the wake of overconsumption—have the island on their must-visit list. With the motto "Exposing the hypocrisy of our time" and determined to shed light on these damaged sites of human havoc, the Spotlighters have been diligently hacking back the repeated attempts of erasing Gipsön's not so flattering past on various digital platforms and archives. "Refuse oblivion, embrace reconnection!" eventually became a common chant among both Spotlighters and Slow Carers.

Sometimes it's difficult to sort fact from fiction, especially when art is involved. But the story goes that the now well-known yearly gatherings of Slow Carers, Spotlighters, and at a later stage various eco pilgrims, were catalysed by an artistic intervention back in the early 2020s, when the island was declared "a post-industrial, readymade sculpture" by the art platform (p)Art of the Biomass and inaugurated

as a "Plantationocene monument"—a reminder of the chemical and agroindustrial era that left soils degraded and depleted not only locally, but also across the globe. The emerging soil crisis and depletion had by then long been hidden behind steadily increasing yields, but the grim reality got thrown right in our faces across Northern Europe during the New Dirty Thirties that transformed deep ploughed monocultures into dust bowls during a couple of dry years. High wind and soil erosion created vast dust storms—just as in Southern USA in the 1930s, if you know your history—driving families on a desperate migration to seek better living conditions. Some Doomsday prophets even claimed the New Dirty Thirties with the food crisis that followed was the punishment for not fulfilling a single Sustainable Development Goal 2030.

After the fertiliser production ended in the 1990s, and before the island could be handed over to the Landskrona municipality, the chemical company had to make sure that no water leaked out from the deposit into the surrounding sea until the island could be considered "clean". Water was circulated by pumps in a closed loop for many decades, not least thanks to rain and snow slowly washing the island. Lime was added to the very acidic water and excess phosphate and harmful components got encapsulated in sediments, preventing them from yet again leaking out into the water. It was calculated that the process would be finished after ten years. But thirty years later, in 2021, though the levels had started to stagnate they were still considered environmentally harmful. New ideas were desperately needed as both the chemical company and Landskrona municipality grew weary of the situation. This opened an opportunity for experimentation that (p)Art of the Biomass was quick to seize. Thus, after it being inaugurated as a Plantationocene monument, a plethora of care practices have flourished on the island that seek to learn from—or rather with—the fauna and flora.

Bioremediation projects—learning with the plants, fungi & microbes. As botany-loving visitors may notice, Gipsön is a quite novel and constantly emerging ecosystem. Pioneer species known to both reclaim damaged lands and, in symbiosis with bacteria, capture nitrogen from the air and fix it to the ground started to appear early on in this nitrogen-poor environment. Common on the island are different species of willow *(Salix sp.)*, sea buckthorn *(Hippophaé rhamnoides)*, alder *(Alnus glutinosa)* and a lot of plants from the legume family Fabaceae. These pioneers prepared the ground and made it inhabitable for other species. If you visit from May to August, the whole island will be in bloom, you will find different clovers *(genus Trifolium)*, together with roses *(Rosa rugosa and Rosa canina)* and the beautifully pink flowering fields of crownvetch *(Securigera varia)* that due to its tough, tenacious roots prevents soil erosion. Humus is slowly building up on top of the white phosphogypsum.

(p)Art of the Biomass, 2021, a piece of gypsum from the Plantationocene Monument, photograph

An attentive eye might also catch a glimpse of the buoys floating in the sea nearby, hinting at colonies of mussels and algae that continuously filter the water from excess nutrients. They belong to the Sea Garden, initiated in 2027 by (p)Art of the Biomass as part of a larger bioremediation project on land and along the shores, where humans with the help of not only algae but also various plants, fungi and other organisms can contain and remove pollutants from the environment, or return excess nutrients in the sea back to the land. Although it may appear as simple and effortless at first, many of the plants that accumulate heavy metals or other pollutants from the ground must be harvested and removed and burnt at special facilities, while others can stabilise them in the ground on site. The purpose of the bioremediation project, where different methods have been tried out at various parts of the island, was to reintegrate Gipsön into the local marine ecology—which it had been sealed off from since its construction—and to follow, learn from, and support the plants and critters that did the work as environmental remediators. Instead of seeing "nature" as a passive provider of ecosystem services to humans, the project was run with the rather unusual view at the time that humans were themselves part of nature and should give back and provide services and care to the ecosystems. Reciprocity and mutual care, together with rising temperatures, are also the reason why the large leaf tea plant *(Camelia sinensis)* was introduced to the island. It is known to absorb excess fluoride, something Gipsön had in abundance. Today you can find Sweden's first cultivated field with tea bushes on the slightly acidic and well-drained soil on the Southern slope of Gipsön. The tea plays an important part of the yearly ceremony that seeks to connect bodies with lands and acknowledge interdependence.

The flora and fauna, on land as well as below water, thus stand as silent witnesses to decades of combined human and more-than-human efforts to cleanse the island of harmful pollutants, or at least mitigate their effects, and make it hospitable for new species. This is indeed a slow process that demands attention and care rather than control. The once small-scale bioremediation projects at various sites and the Sea Garden initiative are nowadays run by the foundation "The Gipsön Commons" gathering research institutes, art communities, Slow Carers, devoted locals, and various organisations such as community gardeners, on land and in the sea. This very diverse community has over the years not only attended to ecological needs but also to the interwoven cultural, social, spiritual, and material needs that comes with every place. This brings us to the ceremony.

The multispecies heritage and reconnection ceremony.
Once a year, usually in the beginning of September, The Multispecies Heritage and Reconnection Ceremony is held on the island. Devoted to celebrating food and multispecies kinship, it is also the time to

commemorate wounds and reinvigorate damaged landscapes and relations. The ceremony was first initiated by a small community of Slow Carers but soon started to attract various crowds, from nature's rights defenders, Spotlighters, to locals and others longing for spiritual connection beyond religious belief systems or dogma.

When I finally get the chance to attend the ceremony, I realise that this is also the occasion when the torch is passed on to a new generation of carers for the island. If you are lucky, you can still encounter some of the 'pioneers': the grand old man who has cared for the island since its infancy, first as an employee to the fertiliser company, later as senior consultant and stubborn enthusiast when the company failed to cleanse the island. He is now in his mid 90s. The founding members of the art collective (p)Art of the Biomass are also present, their long grey hair getting all tangled up in the wind. Together they inaugurate the ceremony:

> We need places to mourn together, mourn the losses and wounds that are left in the wake of the plantation logics that have dominated our societies for too long. Gipsön has become a powerful and meaningful place to gather for many different people, and for various reasons. We need historical sites like this to keep memories alive of the future optimism of yesteryear that brought with it an unwanted and unintended heritage. We are the children that inherited the consequences of their techno-fixes, now we're growing old and have to be mindful of what we pass on.

A silence ensues, accompanied by the rhythmic sound of the windmills in the distance and the intermittent calls of cormorants. At that point the participants are served tea harvested from the island. While it is being poured, the women tell the tale of how phosphorus travels through bodies and landscapes, through cells, tissues and soils. How heavy metals and fluoride accumulate. While raising their cups and before we all sip only a tiny amount of the delicate beverage, they evoke gratitude:

> We care for this island as a naturalcultural heritage. It connects urban lives and our stomachs with the food systems, soils, mines, fossil fuels, and global trade routes. We thank and express our deepest respect to our fellow fungi, plants, animals and microorganisms, to the air and water, to the sun and soil.

After this ceremonial opening, we are invited to take part in the festivities that include care work, eating and dancing:

> This ceremony celebrates reciprocity. But it's also an ecological duty we perform here. We humbly offer our services to the local ecosystem. As you will see, if we pay close attention to the plants, they have surprising things to tell us.

We get divided into groups for ecosystem caring, that is voluntary work at different stations around the island. You can choose which stations you want to attend. You can gather wrack —seaweed washed ashore—and use it to build soil on land, dedicate yourself to maintenance work in the Sea Garden, or tend to the tea field and harvest for next year's ceremony. There are many other options, such as species inventory and mapping, or storytelling sessions where new and old stories are weaved in multiple forms to be memorised by the ceremonial guides. A group of foragers also venture out to harvest wild, edible plants for the Chlorophyll Bar—today, some plants on the island are safe to eat. Feeling adventurous that day, I choose to join some Slow Carers to the big ravine, in the South-Eastern part of the island, a spot you are usually not allowed to visit without a guide as there may be risks of cracks. This is where samples are regularly taken from the ground water to measure levels of phosphates, pH and fluorides. From the contented look of my guide, I understand that the levels are good. I am told that they have thankfully continued to decrease since the bioremediation projects were launched roughly 25 years ago. Therefore, the Damned Floods Years at the end of the 2030s, which destroyed some of the barriers that isolated the island from the surrounding sea, were not such a catastrophic event as expected. The slow care work must continue though, I am told, for an unforeseeable time.

During a break, food is shared and eaten in a communal picnic. My group gathers around a young guide, Vandana, who waves with what looks like a golden ear of wheat. This is the Kernza wheat, a perennial crop that is cultivated in polycultures on the mainland. You may have spotted the fields resembling mosaics of different plants when travelling through Scania before coming to Gipsön. I am offered a bit of Kernza bread sprinkled with fresh pea sprouts—high in phosphorus—and a drink from the Chlorophyll bar. A healthy feast made of what is available at this time of year, from local farmers and leftovers from food stores and markets on the mainland, complemented with foraging on the island. A new type of Swedish 'Smörgåsbord' is shared among us.

The evening ends with joyful dancing and singing. As boats shuttle back and forth to bring us back to the mainland, I suddenly feel the redness of my wind-battered cheeks. But I also sense how the day has made room for a mix of emotions, all at once. And strangely it feels liberating. The Gipsön Commons has succeeded in caring for the island both as a place to mourn and grieve but also as a place of joy.
A day late to forget.

Fun facts.
Did you know that the island officially has been granted the status of artwork and naturalcultural heritage of national interest? A surprising series of events would conspire to make this happen. In 2034, a well-known ecoart dealer decided to buy the conceptual and performative

piece of art from (p)Art of the Biomass for the symbolic sum of 333 Swedish Crowns and donated it to Malmö Art Museum and Malmö Museer. (p)Art of the Biomass in turn donated the money to the foundation "The Gipsön Commons", which for the same sum bought the actual island. The municipality of Landskrona agreed to this deal, as the chemical company, since they would be relieved of their responsibilities, agreed to donate a large sum of money to the foundation so that the long-term care work, research, art and commnity work carried out on the island could continue. In addition, the museums joined in partnership with the foundation to honour the contract that stated that "the owner of the artwork commits to support and care for the living multispecies natureculture the readymade sculpture continuouly is becoming". The island Gipsön and the artwork "Gipsön"—life and art—could thus be said to have merged. Around the same time, the introduction of a 10-year trial period of a universal basic income allowed people to engage in a wide range of volunteer work. Persistent work and many happy coincidences thus helped make Gipsön into the living monument, thriving commons, and important ceremonial site it is today.

Less-well known is that it is said that (p)Art of the Biomass mounted a plaque on the island, below the water line with a quote from a famous eco-philosopher. But the plaque has never been found, arousing the curiosity of both Spotlighter and diving communities. It has most likely been completely overgrown by algae and mussels. The words though, are recited during the ceremony:

> In memory of the many shadow places in our biosphere, and as a gesture of gratitude to Val Plumwood who shone light on damaged lands and relations that 'consumers don't know about, don't want to know about, and in a commodity regime don't ever need to know about or take responsibility for', we hereby declare this island a naturalcultural heritage site. This Plantationocene monument, a readymade sculpture formed by polluted gypsum, stands as a reminder of the multiple places that sustain our lives both materially and emotionally. Even the unwanted or disregarded ones need to be recognised as part of that which we call home.

Sant Khalsa, *Salt/Water 3*, 2013, archival pigment print, 19.5 × 29.5 inches

3835
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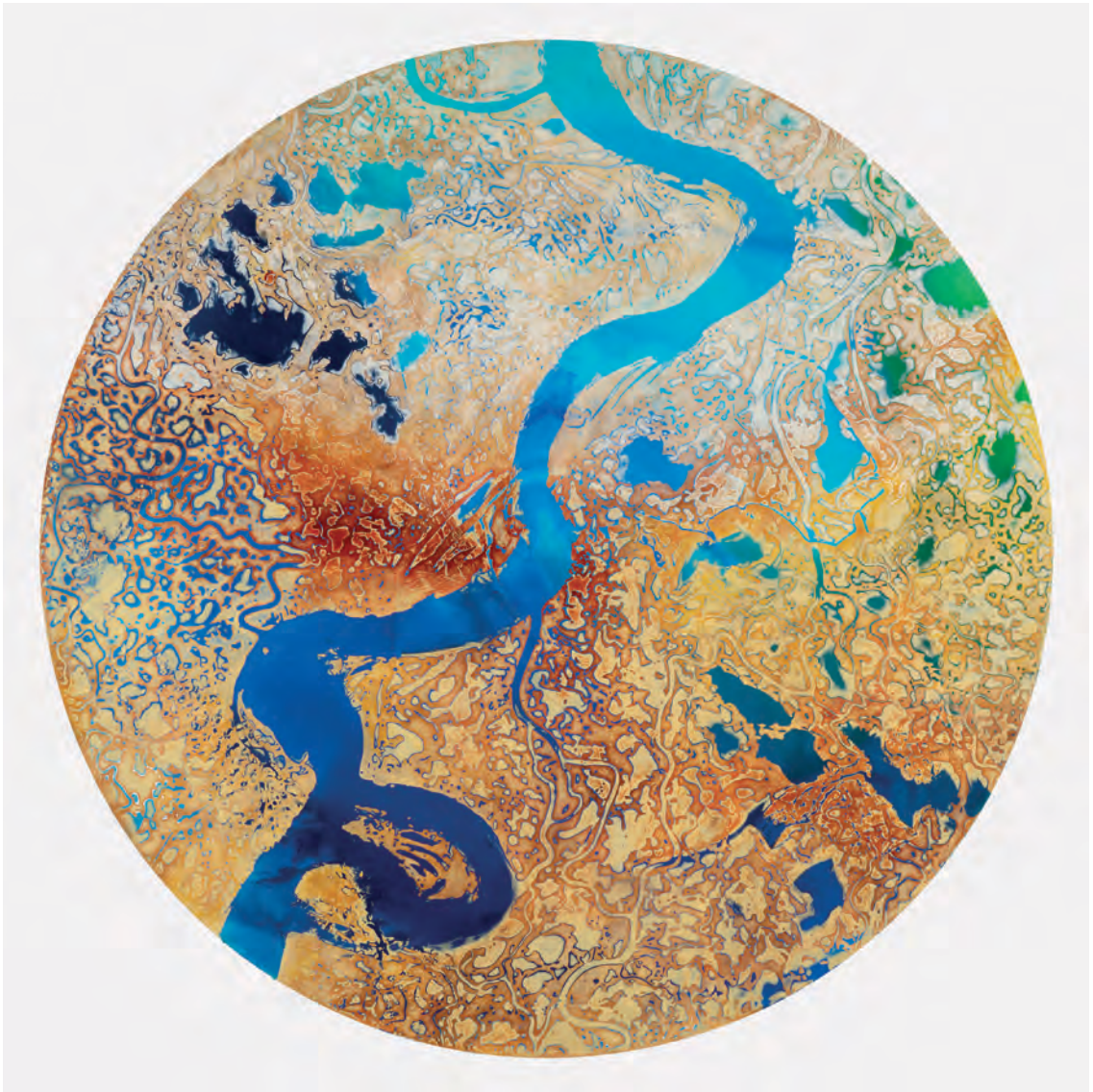
← Peggy Weil, *Core California*, 2021, digital collage of Salton Sea geothermal cores
↓ Lawrence Gipe, *Russian Drone Painting No. 1, (Mir Mine, Siberia)*, 2018-2022, oil on canvas, 72 × 96 inches

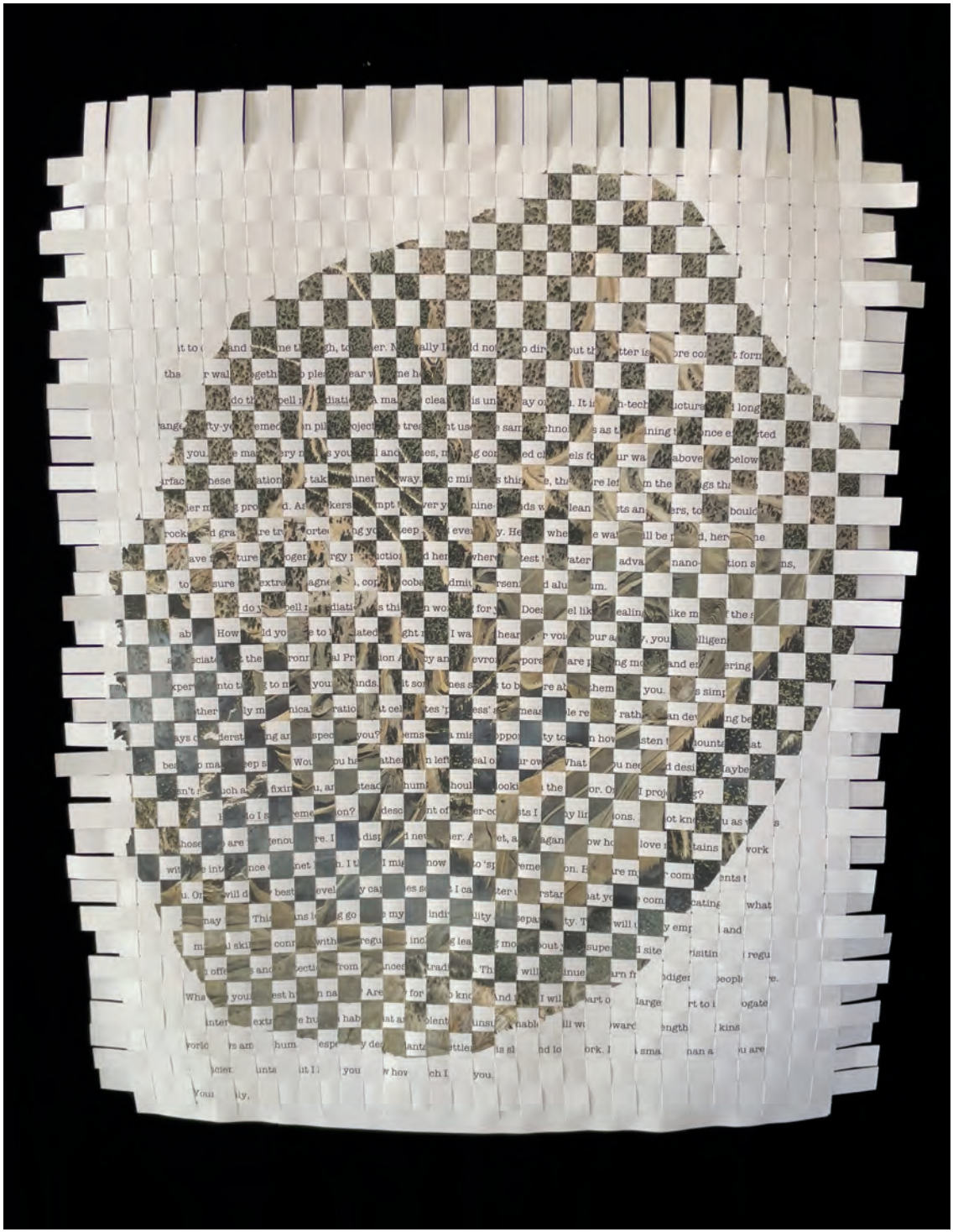
↓ John Sabraw, *Hydro Chroma S1 2,* 2022, acid mine pigments, laser etch, acrylic and oil on aluminum panel, 44 × 44 inches

→ Barbara Boissevain, *Extraction IX*, 2021, archival pigment print, 18 × 24 inches



Kala Stein, *Atmospheric River*, 2023, ceramic, 12 × 6 feet, Image by Garrett Rowland

Christopher Lin, *Business As Usual*, 2023, banker's desk, sand dollars, glass aquarium, New York Harbor water, brass figurines, calcium carbonate, light, wires, power supply, glass vials, feathers, gum arabic, activated carbon, soil, moss, brain coral, chair, and ink on ledger, 42 × 36 × 36 inches



Carol Padberg, *Questa*, 2023, woven paper diptych, 16 × 20 inches each

Jessica Houston, *Letters to the Future*, 2019, archival pigment print, 48 × 72 inches

Ryland West, *Kennicott Glacier 1*, 2022, digital photograph 80 × 84 inches

Shifting Landscapes Static Bounds
Kellie Bornhoft

Nature with a Capital N

Nature cuts deep consequences into the very real and entangled relationship between humans and the environment. The concept of a sanctified *other* to humankind leans heavily on the belief that there are materialities, spatial horizons, and living matter *out there* and kept pure from human intervention. It holds the conviction that Nature is a thing that can be preserved because it is containable and controllable. But truly, the environment is entangled in and affected by all actions in all landscapes. This imagined human estrangement from Nature disconnects a person from the responsibility for one's actions within their environment. It divides the landscape into favored/attended spaces and unfavored/neglected spaces. The park can be Nature and the landfill can be culture. This shortsighted logic forgets the bleeding edges and the overlapping pockets. The sky always carries water and smoke to new places. No landscape lives in isolation.

The strata of the Earth's crust measure differently after events like Hiroshima or the invention of the steam engine. The material makeup of the strata now includes plastic, aluminum, concrete and radionuclides as well as altered carbon and nitrogen isotope patterns.[1] Geologists have used these markers to claim that we are living in a new epoch, the Anthropocene.[2] Such a name emphasizes the influence of *man* as the generator of the Earth's fate. This concept has been used to bolster arguments that we must retreat from our belief that nature as a resource that can endlessly be extracted from. Problematically, the Anthropocene discourse in geology makes deeply sweeping generalizations that many feminist scholars argue stem from colonial, racist, and sexist ideologies of Nature.[3] The Colonial mind-sets centered on conquering people and land are much to blame for our current climate troubles. *Thriving* capitalist economies that treat resources and people as expendable are depleting our resources and polluting far more than the planet can afford. The Anthropocene name unfairly generalizes blame to every human within humankind as a whole. The catalyzing actions causing our shifting landscapes are not universal across human geographies, but rather center in Eurocentric capitalist economies. Western cultures, marked by overuse and overconsumption, have posed dire consequences for all. America as a global capitalist leader has contributed greatly to the extractive scarring of the planet.

Nature—an unmarked landscape believed to still yet hold a glimpse of wild—is the socially constructed counterpart to culture. Contemporary ecological thought disrupts the possibility of such spaces. Bill McKibben, as well as ecologists, argues that a preserve of Nature can no longer exist due to the altered condition of the atmosphere and its all-encompassing smothering of the planet.[4] Steven Vogel asserts Nature never could have existed outside of humans because humans are a part of Nature and therefore cannot act unnaturally.[5] In such terms, there is no pocket of this planet untouched by human impact.

1 J. S. Schneiderman, "The Anthropocene Controversy," in *Anthropocene Feminism*, ed. Richard Grusin (Minneapolis: University of Minnesota Press, 2017), 169–196.

2 Paul Crutzen, "Geology of Mankind," Nature 415, no. 23 (2002): 23.

3 Here I refer to a major theme in the discourse of feminist geographies from works such as Donna Haraway's "Chthulucene" and Kathryn Yusoff's *A Billion Black Anthropocenes or None*.

4 Bill McKibben, "The End of Nature," in *American Earth: Environmental Writing Since Thoreau*, ed. Bill McKibben (New York: Library of America, 2008), 719.

5 Steven Vogel, *Thinking like a Mall: Environmental Philosophy after the End of Nature* (Cambridge: MIT Press, 2016), 227.

Nature is a deep-seated culturally constructed ideology. Nature along with institutions such as parks or zoos that uphold Nature's separatist myths are ripe for critical picking. Nature is an actant; it is a force that animates thick in red-blooded Americans. So thick that it emboldens the arguments of climate change deniers. Is it possible that the myth of Nature has been fortressed so well that it appears as if the environment can take no human harm? Entire industries profit from the denial hypocrisies of such fanatics.[6]

In my own travels, I have found two types of responses from visitors to parks. One set of responders feel that their ecotourism has brought attention, financial support, and general good to the locations they visit. It scratches some sort of moral itch. The second response is for the tourist to be fascinated by the scenery and overcome by wonder and then want or need to believe such environmental features are too great to be damaged. They drink the kool-aid that is the narrative of Nature. Either way, statistics show that one-third of carbon emissions in the United States is produced by tourism.[7]

Invented Histories Driving Industries

What does it mean to preserve a landscape for the "enjoyment of future generations" when science forecasts that those generations will be fighting simply to survive on this planet?[8] America's national parks cannot preserve a pristine wilderness void of human alteration for two relentless reasons. First, humans already lived in the Americas for millennia before Europeans stepped foot in the *not-so* New World. In fact, pre-Columbian indigenous populations in the Americas were estimated at 54 to 61 million people—and were devastated to 6 million within approximately 150 years of European settlement.[9] Native Americans were removed or systematically wiped out in order to construct the myth of an untouched landscape. Second, the landscapes are not being preserved. Parks are suffering damages of climate change just the sameas the rest of the world. Narratives of Nature are perpetuated through parks, and they act as a distraction from the dark histories of how the land was conquered as well as the grim forecast of the stability of the landscapes amid a shifting climate.

In 1851, a battalion of California gold rush miners drove a Native American settlement out of present day Yosemite Valley with brute force. The battalion's leader, L.H. Bunnell, named the valley *Yosemite* after the tribe he had just removed from the land. The tribe actually called themselves the *Ahwahneechee*, and *Yosemite* actually translates to "a band of killers." Imagine Bunnell stowing musket on horse, riding off with the cries of the people yelling "Yosemite!" ringing in his ear—as if their impending death compelled them to yell out their own tribe's name. Today, the warnings they cried out to one another echo into the name of America's first preserved landscape.[10] This particular park was on the list of locations I intended to visit; however, the park was

6 Oil companies such as Exxon and others have funded research to counter claims made in climate change research. They have lobbied in Congress to create counter narratives to influence legislation that would otherwise limit their production. See Nathaniel Rich, "Losing Earth: The Decade We Almost Stopped Climate Change," *New York Times*, August 1, 2018.

7 Stephanie Rutherford, *Governing the Wild: Ecotours of Power* (Minneapolis: University of Minnesota Press, 2011), 142.

8 "NPS Organic Act of 1916," National Park Service website, last updated November 17, 2018.

9 Heather Davis, and Zoe Todd, "On the Importance of a Date, or, Decolonizing the Anthropocene," *ACME: An International Journal for Critical Geographies* 16, no. 4 (2017): 761–80.

10 *The National Parks: Americas Best Idea*, episode 1, "The Scripture of Nature (1851–1890)," directed by Ken Burns, aired September 27, 2009, on PBS.

closed for several weeks this summer due to wildfires—fires fueled by the climate's warmer and drier weather.[11] Yosemite has been populating current news headlines, and the warning still calls out to us today, telling of tumultuous futures to come.

Accounts of the Ahwahneechee, along with histories of violence against other Native American tribes and even narratives of climate change, are hard to come by in national parks. During all of my travels, I did not see any park literature that spoke of the changing climate. And when I did find mentions of tribes that were indigenous to the lands overturned to the parks, they were often white-washed narratives made *family-friendly*. Visitors are protected from unpleasantries—and in turn, problematic narratives of Nature take rise in the absence of the truth that the public needs.

The seemingly innate draw of the extraordinary views that the parks offer is not entirely tainted. If the land was not protected by the government, the possibility of privatization could offer worse fates. These institutions intended for preservation are not entirely harmful in their efforts to protect land or animals. However, we should complicate their perpetuation of the myth that a preservable and separate Nature can exist. These lands are public; they are a shared American institution for which we should feel responsible. We should honor the true histories that have taken place in their bounds, while also being aware of what is to come. We should question who has agency to give words to these landscapes. We need to understand that we are implicated by, in, and with the ideologies of our culture.

The Need for a New Narrative

Climate change is not new. Reports of fossil-burning fuels altering our atmosphere are nearly a century old. Predictions of the symptoms that our planet is presently experiencing are at least half a century old.[12] The trees are melting, ground is shaking, coral is bleaching, ice is cleaving fast, and waters are rising in some places while receding in others. The issue is not the distribution of information; it is the overwhelming affect of such information. Timothy Morton devotes an entire book, *Hyperobjects*, to the concept that the scale of climate change is too large to be comprehended in its entirety.[13] The sickness of our environment is so sublime that we disengage from the facts to cope. News articles and data charts, if taken in, have the ability to petrify us. Headlines float upon the surface of our understanding, but in their enormity, they fail to saturate our being. This year, California has experienced the worst wildfires in history.[14] While some people may be able to speculate the implications of what our planet would look like another couple degrees Celsius warmer, I personally find it hard to grasp. When presented with the scapegoat, it is sensibly easier to nest in the comfort of Nature than to believe it cannot be harmed.

11 Alex Johnson, "100,000 Acres Later, Yosemite's Ferguson Fire Declared Fully Contained," *NBC News*, August 20, 2018.

12 Rich, "Losing Earth."

13 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2014), 2.

14 Tim Wallace et al., "Three of California's Biggest Fires Ever Are Burning Right Now," *New York Times*, August 10, 2018.

As of today, proposed solutions to our current environmental crisis range from accepting our losses to "making-kin" and adapting to disrupting capitalism. Donna Haraway optimistically compels us to "make kin" with the world we live in and to understand how our actions are entangled into the myriad of outcomes.[15] Iraqi War veteran Roy Scranton claims that we should accept our losses and learn to die in humility.[16] Steven Vogel uses a decrepit shopping mall turned city park in Downtown Columbus, Ohio, as a model for an anti-capitalist embrace of the commons.[17] Anna Lowenhaupt Tsing uses the Matsutake mushroom as a model for resilience.[18] The proposals to the crisis our planet faces are many. However, the common thread in each of these theoretical frames is that they consistently begin first with acknowledgement. How is it that we need this reminder to humbly acknowledge the state of our environment when the actual fallout of climate change regularly confronts us in news headlines with these fires and those storms?

Ursula Le Guin explains our resistance to data this way: "Science describes accurately from outside; poetry describes accurately from inside. Science explicates; poetry implicates. Both celebrate what they describe. We need languages of both science and poetry to save us from merely stockpiling endless 'information' that fails to inform our ignorance or our irresponsibility."[19] If we're seeking to saturate our comprehension, perhaps we need an approach that implicates the readership. How can abstract data become more palpable? If charts and data cannot do the job, then we need forms that can saturate. If the scale is too vast, if the information is too much to digest, then what kind of lens is needed to examine our precarious state? The lens we have now seems to function as a thick pane of glass, dividing and contorting with the perceived separation of humans and Nature.

Shifting Baselines, Static Narratives

The slippery concept of climate change is made elusive by the enormous outcomes it procures. A person who engages through empathy loses all anchors of selfhood in this all-encompassing forecast. This is vitally important to explain why we cannot fathom climate change. "Shifting baselines" is a concept used to describe a generational amnesia, or the inability of one generation to pass on their perceptions of change to the next generation.[20] For instance, my grandmother who lives in rural proximity to Kansas City, Missouri, keeps ice skates at the house and would always tell me that once it gets cold enough to skate the pond, we could go out and skate. In her lifetime this was a viable possibility. In my lifetime, Kansas City no longer gets cold enough for long enough to freeze the pond. The change exists in her generation—a change so unsettling to her that she still keeps the skates. From the Earth's perspective, global warming is fiercely rapid, but it is also slow enough to be forgotten amongst generations. But humanity has a long-held tradition for combating generational amnesia: story.

15 Donna Jeanne Haraway, *Staying with the Trouble: Making Kin in the Chthulucene*, (Durham, NC: Duke University Press, 2016), 101.

16 Roy Scranton, *Learning to Die in the Anthropocene: Reflections on the End of a Civilization* (San Francisco: City Lights Books, 2015), 23.

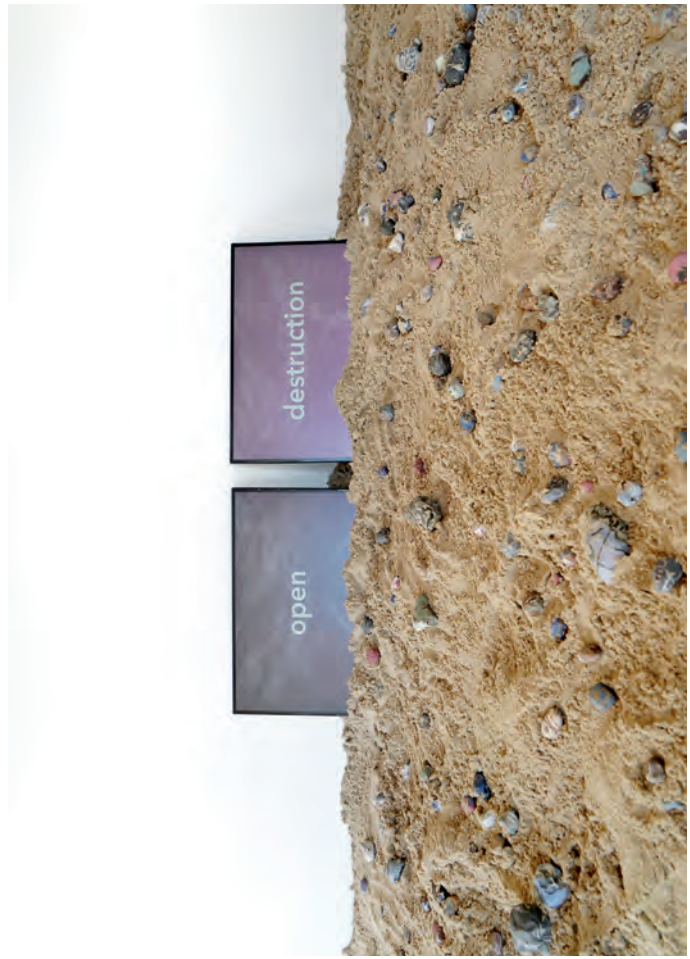
17 Vogel, *Thinking like a Mall*, 226.

18 Tsing, Anna Lowenhaupt, *The Mushroom at the End of the World: on the Possibility of Life in 18 Capitalist Ruins* (Princeton, New Jersey: Princeton University Press, 2017), 4.

19 Ursula K. Le Guin, "Deep in Admiration," in *Arts of Living on A Damaged Planet*, ed. Anna Tsing, Heather Swanson, Elaine Gan, and Nils Bubandt (Minneapolis: University of Minnesota Press, 2017), 15–21.

20 S. K. Papworth, J. Rist, L. Coad, and E. J. Milner-Gulland, "Evidence for Shifting Baseline Syndrome in Conversation," *Conservation Letters 2*, no. 2 (2009): 93–100.

Kellie Bornhoft, *Tremors*, 2023, speakers, amplifier, monitors, sand, porcelain, Python/ObsPy code, Max patcher, and cables, 10 × 18 × 3 feet



Narratives persist. Politics, education, economies, public spaces, and art are all full of narratives. With human impact now written in the stone, even rocks hold narratives. The plaque that stands at the edge of the Grand Canyon and charts the colored layers tells a story of time—a story that we have no personal memory of but can perhaps imagine through the plaque's narrative. Stories can bring light to wounds of estrangement, commodification, racism, and extraction. There are stories that promote complacency and stories that champion resistance.

A Case for Rocks

Everything is in the rocks. Stones tell tales that require us to stretch our understanding of time. A mountain sheds its skin. Scree, the small bits of rock awaiting erosion, flakes off into particles still materially composed of its once giant self. Stones disperse and reunite through the very geological processes that shape the terrain of this planet.

It is in the stone that we date the Earth; we dig up rock to read histories of animate beings roaming along and sinking into the planet's surface. But now geologists can surface our futures—a recent development within the last handful of decades. The Anthropocene disrupts a conventional understanding of rock by complicating their static presence among us. Rock is reactionary and moves with agency—which should come as no surprise, as they contain fossil fuels that hold the energy from millennia of once-living beings. Elizabeth Povinelli describes this idea in her concept of the *carbon imaginary*: our limited perception of seeing nonliving matter as inert and inanimate. She points out that the carbon imaginary counters many forms of indigenous knowledges. Povenelli states that we should abandon the living and nonliving binary by which we prioritize matter. She sees a need for this ontological orientation in our current times of climate change.[21] The stone in the strata is moving, rearranging, groaning. Rocks offer us an opportunity to dismantle our superiority as authors and organizers in the landscape. If life is in the stone, then human engagement with such material becomes critical.

Though we haven't yet melted into the strata, our actions have. Rock, the ancient and prophetic medium, is telling us of the not yet. As Kathryn Yusoff writes, "The Anthropocene, in the spectre of human-as-strata-to-come, offers a *waiting materialism*, not as reservoir but as the immanent potential of a material actuality."[22] Rock has begun storytelling at an accelerated rate, with urgency, because the stone has agency. The overwhelming animacy of stone is speaking to us, or rather warning. We humans need to see stone as more than just an extractable material resource. That extraction, raping of the Earth's surface, breeds dire consequences for all living and nonliving beings.

21 Elizabeth Povinelli, *Geontologies: A Requiem to Late Liberalism* (Durham: Duke University Press, 2016), 13.

22 Kathryn Yusoff, *A Billion Black Anthropocenes or None* (Minneapolis: University of Minnesota Press, 2018), 21.

Urgency and Agency

If time and scale are conditions that confuse our comprehension of the shifting landscapes, then perhaps we can reframe these conditions by using terms of urgency and agency to resist inaction. Urgency relates to time; it is the rate of how much effect we can produce within the limited time we have. Agency refers to scale; it is the potential spread of the effect to invoke change, difference. With urgency, we can speedily react through our inability to comprehend deep time. With agency, we can shed doubt of one's ability to impact this immeasurable hyperobject of climate change and decide that action is more productive than inaction. When the news headlines overwhelm us, they shake our agency. The growing disaster towers over our faith in humanity's ability to respond. When writers like Scranton claim that we are beyond saving, doom halts our urgency. And with no other option than to cope, we compartmentalize and embrace normalcy in the everyday. Persistence in this shifting landscape requires response, even when the number seem unlikely.

Our survival—or extending what is left of it—depends on our ability to see the mess we have made. First, we must acknowledge the troubling ideologies that mask our extractive journey into the mess. Owning a landscape, even publicly, is a territorial violence. To draw boundaries in the landscape rejects any of notion of that land's agency, and it assumes that humans can author those bounds. The preservation of wildlife and diverse ecosystems found in the United States undoubtedly slows the privatization and extraction that would otherwise happen within those park bounds. However, we need to be suspicious of the deceitful narratives that public lands perpetuate. We know that parks with their myths of a deviating Nature are cultural constructions and ethical distractions. As the shared-owners of these public lands, we should propose new narratives, new kinds of literature to frame the landscapes. Persistence requires us not to shy away from sublime notions of time and scale. It requires us to shake up our entitled, extractive, shortsighted perceptions so that we can more thoughtfully engage on this shifting stone we call Earth.

PlantBot Genetics, DesChene+Schmuki, *Behind the Tailings*, 2022, ceramic, 18 × 7 × 7 inches

Alan Petersen, *Six Grand Canyon Breccia Pipes #6*, 2020, graphite on paper, 25.5 × 25.5 inches

5/26/17 Pipe 998 35.8797222 112.8997222

9/13/19 Pipe 177 36.0919203 112.0529166

9/14/19 Pipe 176 36.0937025 112.1542071 2/1/2020

↓ Lawrence Stevens, *Buck Spring*, 2012, iphone photograph, near Williams, Arizona, 24 × 15 inches
→ Stephanie Garon, *Gold Rush*, 2022, steel I-beams, 1,000 lbs extracted mine cores from Maine/Passamaquoddy land, LED tickersign, 13 × 10 × 10 feet

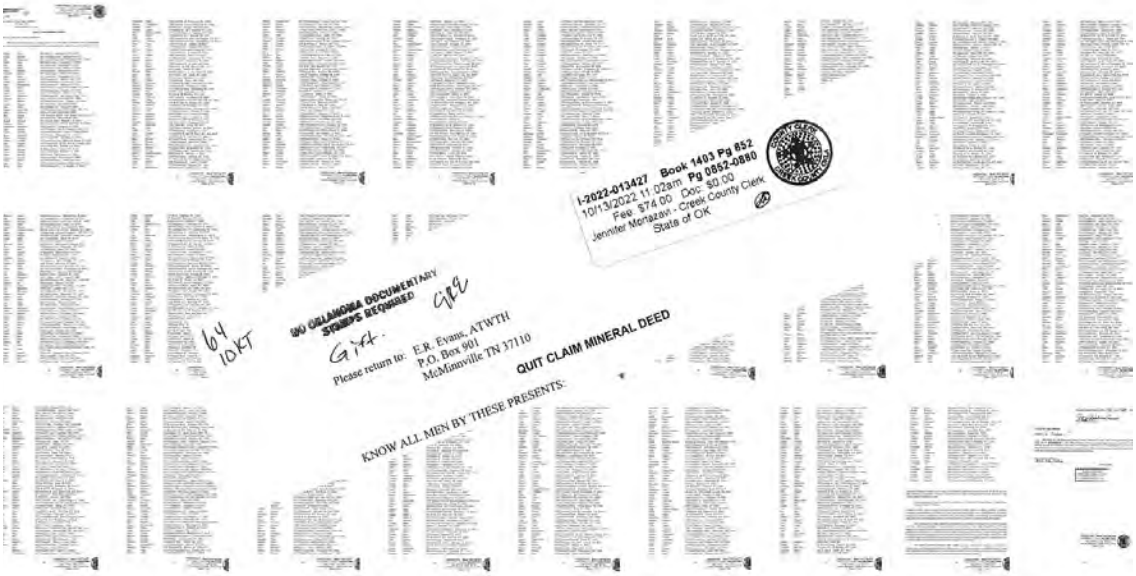
AG 20.66

Perdita Phillips, *Wheatbelt anticipatory archive III*, 2023, digital inkjet print on Dryandra soil prepared paper, 11×16 inches (each)

Susana Soares Pinto, *how to bend curves?* (still), 2019, video with sound by Eliane Radigues with Susana's voice, 8:56 mins/secs

Walmeri Ribeiro, *Não se pode tocar, está em mim, está em nós (It can't be touched, it's in me, it's in us)* (still), 2022, film made in collaboration with Eloisa Brantes and Ana Emerich e Sofia Mussolin, commissioned by Itaú Cultural, 14:59 mins/secs, Image by Cícero Rodrigues

Eliza Evans, *All the Way to Hell*, 2022, photograph filing the first mineral deed, photo documentation of deed filed, drone still of Oklahoma mineral rights surface, dimension variable



I-2022-013427 Book 1403 Pg 852
10/13/2022 11:02am Pg 0852-0880
Fee: $74.00 Doc: $0.00
Jennifer Mortazavi - Creek County Clerk
State of OK

64
10KT

NO OKLAHOMA DOCUMENTARY
STAMPS REQUIRED

Gift.

Please return to: E.R. Evans, ATWTH
P.O. Box 901
McMinnville TN 37110

QUIT CLAIM MINERAL DEED

KNOW ALL MEN BY THESE PRESENTS:

Dear Soiless
Jill Price

Dear Soiless,

You may not know you are missing me, but I am writing to you in the futurity of your concrete surfaces, steel infrastructure, and glass walls to say how sorry I am that I cannot be there for you. I did my best to ensure our sur vival and your health, but the unrelenting development of our resting places led to my network of pollinators, healers, stabilizers and nourishers being unable to fight off disease, manage floods, or withstand droughts.

I realize you have digital projections, virtual worlds, and sound recordings of my kin moving in the wind and catching rain, but these technologies do not allow you to feel the coolness of my shade on a hot summer day, smell fragrant pollens of branches in bloom, or rely on my torso when you need something to hide behind or lean on.

If you do sense a loss, please do not be angry with those who came before you. Some did their best to defy and resist those set on extraction and expansion. If I am correct, I believe some relatives on your mother's side actually chained themselves to one of my deciduous cousins in order to protest an ill-conceived airport! It has also been told that your great aunt instigated a plantable POSTCARDS for TREES campaign on behalf of my co-worker Mr. Hawthorne. If some of your family is still around, perhaps they may be able to share these stories and other accounts of how humans and trees used to collectively benefit from the fresh green growth of a wet spring, breathe the crisp, clean air of a fall afternoon, or shimmer beside one another while around a fire and under a solstice moon.

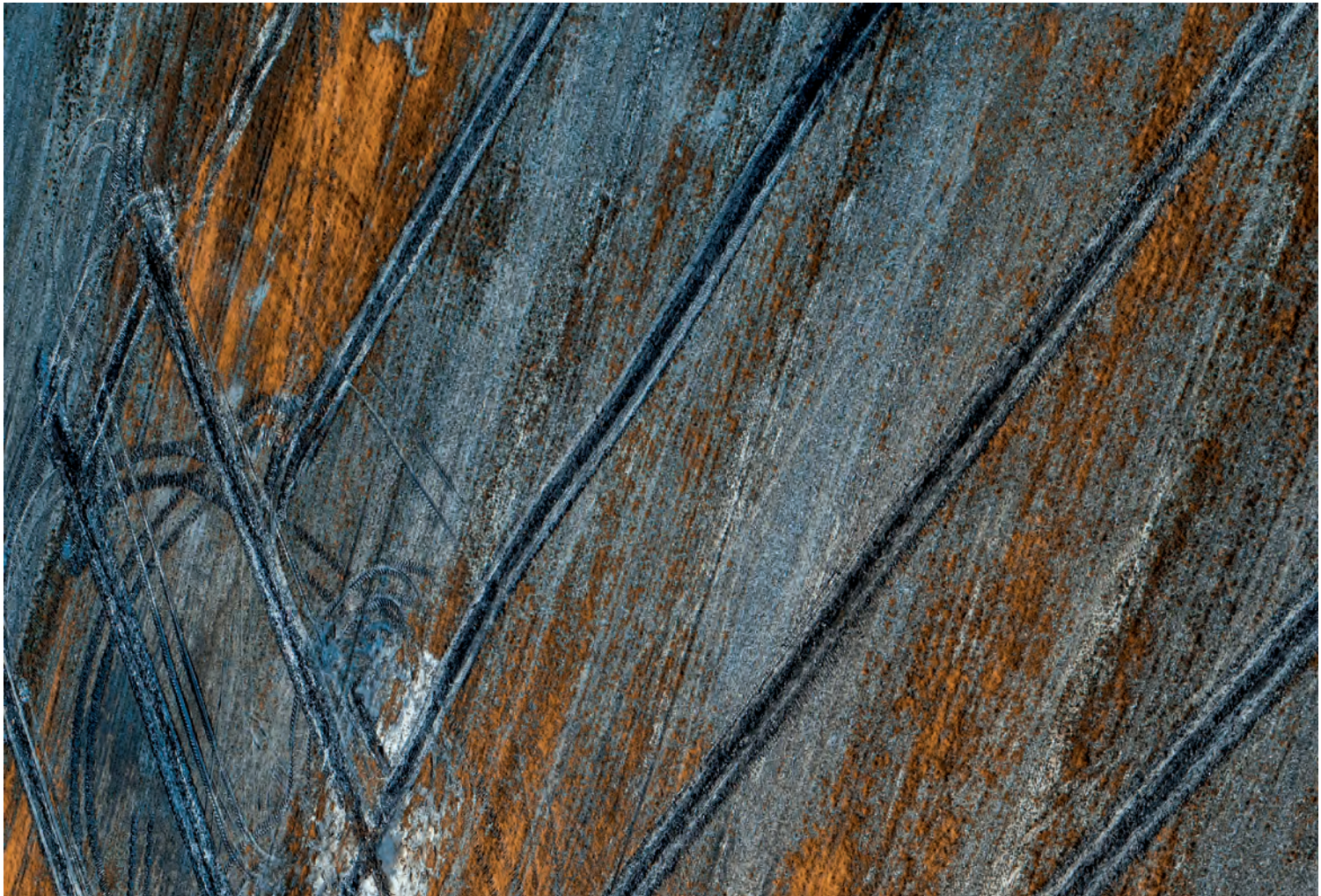
They probably won't tell you about the ridiculous songs they sang out of tune, but hopefully they will tell of my crackling and cushioning needles beneath their feet and how they would often use my fallen limbs to write in the sand. Parents may also unpleasantly recall my sticky sap all over their youngster's hands and freshly hung laundry, but are sure to fondly remember our aromatic offerings and how they would kiss the skin and clothing of those they loved.

Forgoing my endless frustration with how my ecological benefits and talent for design has been relentlessly undermined over the years, it is probably time to explain why I chose to write to you. As you might suspect I need a favour. Through my underground communications I have heard that many of my direct and distant relatives still reside in the form of seeds deep beneath the paved paths you walk each day. Hoping that you might choose to follow in some of your family's footsteps, I was wondering if you would help to unmake some of the impermeable surfaces that prevent the embryos of my botanical ancestors from seeing the light of day. You don't need to make large holes in the pavement or dig up entire lots of asphalt, simply create some cracks here and there while no one is looking. As before, we can and will do the rest.

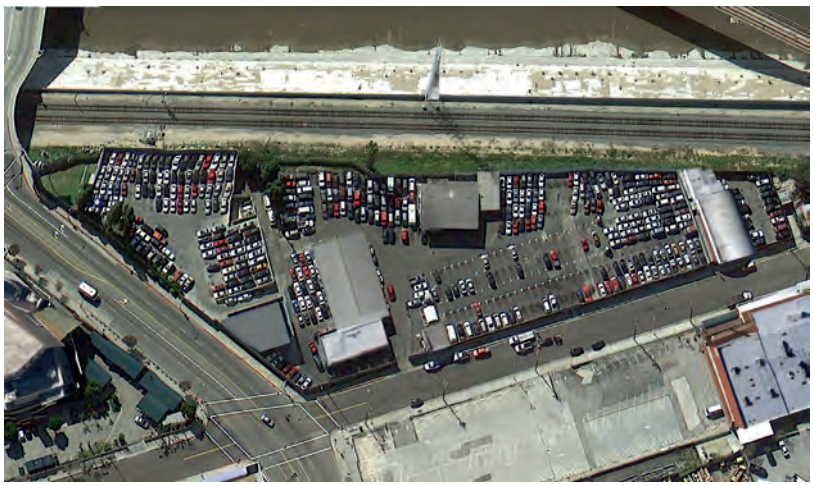
Extremely grateful for your assistance in advance,
Ms. Strobus

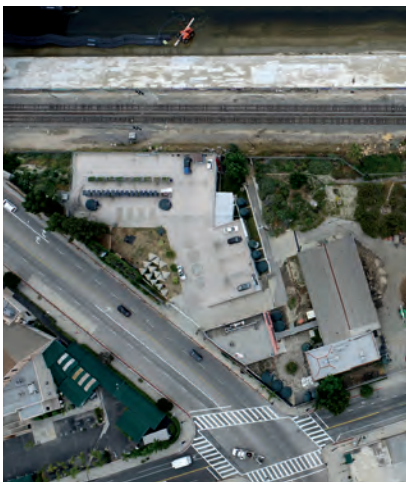
Jill Price, *UNmaking Concrete*, 2023, water soluble graphite on handmade seedpaper, soil, water, and sun, approximately 5 × 26 feet

Jason Lindsey, *The River Underground No 3*, 2021, digital photography, 20 × 30 inches



Lauren Bon + Metabolic Studio, *Un-development 1*, 2015–2023,
Bending the [Los Angeles] River art project



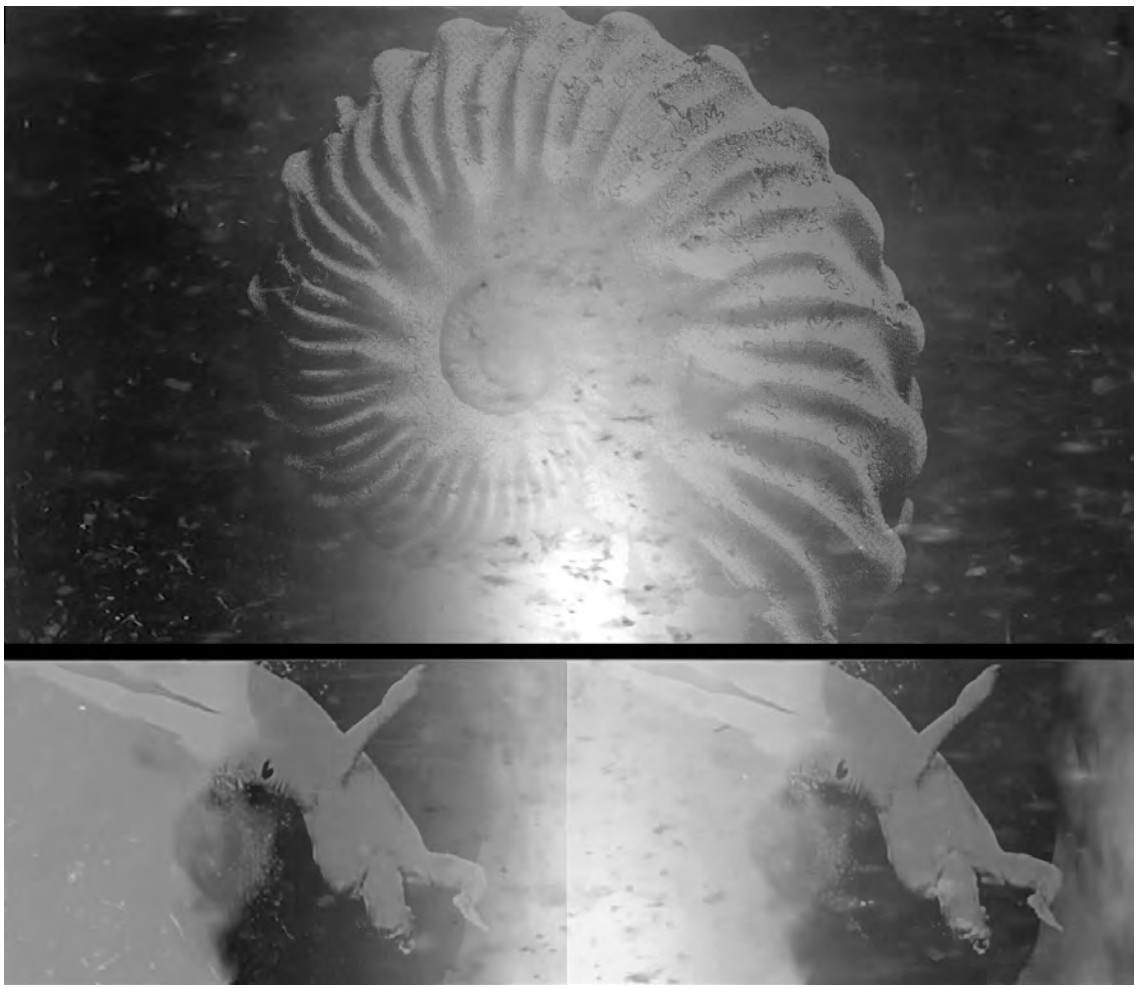


Erratic Rock, A Conversation
Monika Tobel

Stardust
Stardust
Stardust moulded clay figures we both are
Our bodies chiselled by oxygen molecules that
Travelled through the world's lungs.
Tectonic plates
Tectonic plates
Tectonic plates spewed you out,
Pushed you up into mountains.
Minerals tightly packed within your
Reassuring form
Minerals that sustain me
Minerals that build me up
The calcium of my bones is
The calcium drawing messages across your body.
Connecting through mineral ancestry
Through starts
Through soil
You in deep time, coming through the Earth's crust
Formed by creaking tectonic plates.
Spewing volcanoes and melting glaciers
Carving sacred hieroglyphs upon you
I can feel the birth of the planet on your smooth surface
The creaking of my joints echoes the elements
Breaking you away from the earth's crust
From the mountain

From the boulder
Errare Wonderer
Migration
Migration
Migration
Pushed away, pulled apart, rushed through
Fighting against it
Or becoming with it
Through letting go, through moving with
Through a dance
Of water
Of wind
Of fire
Of time
Your body forever changing, forever becoming
My life, a flicker of light in your perpetual existence
Still
We intermingle
We coexist
We become with, each other
Our atoms intertwine on fuzzy, vibrating perimeters
As we touch
As we taste
As we listen
Listen
Listen

← ↙ Katrina Bello, *Terra Niobrara* (still), 2022, pastel on paper, 59 × 100 inches, *Sky Into Stone*, 2021, video animation, 57 seconds
↓ Kyra Clegg, *Ghosts*, 2021, video, 3:59 mins/secs



Dennis DeHart, *Exotic Terrane*, 2022, pigment print, 30 × 40 inches

Helen Glazer, *Channels Blasted in Rock*, Kangerlussuaq Fjord, 2022, archival pigment print, 16 × 24 inches

The Hills are Alive: Still Searching for a Mystical Materialism

Sue Spaid

Revised version of an essay published in *Ulrika Sparre: Ear to Ground* to accompany Sparre's 2020 exhibition at Index in Stockholm

"Stones possess a kind of gravitas, something ultimate and unchanging, something that will never perish or else has already done so. They act through an intrinsic, infallible, immediate beauty, answerable to no one, necessarily perfect yet excluding the idea of perfection in order to exclude approximation, error, and excess."
—Roger Caillois, The Writing of Stones, 1969

Earth: Scientists' Notorious "It Girl"

One unintended consequence of "climate chaos" is the fact that scientists across the globe are reassessing Earth's status as a living being. Recall that scientists already caught the world off guard when they demoted Pluto's planetary status in 2015. Today's reassessment requires scientists to rethink rocks, since Earth's mantle, which occupies 84% by volume, is "all" rock. Water may cover 70% of Earth's surface, but the crust, or thin outer layer, is mostly rock, which adds another percent. We humans have managed to hitch a ride on a massive magnetic rock, only to be molded by our environment, as we daily handle stones and ores like turquoise, silver, copper, aluminum, and iron, while global industries mine and employ coal, oil shale, gemstones, limestone, chalk, rock salt, potash, gravel and clay. Moreover, our bodies contain phosphorous, calcium, manganese, sulfur, potassium, sodium, chlorine and silicon, all elements that primarily originate as rocks. To maintain our vitality, human beings must ingest sufficient amounts of iron, calcium, magnesium, chromium, selenium, zinc, and vitamins that are also found in rocks.

Industrial agriculture not only detests rocks, which destroy farm equipment; but most farming practices are so disconnected from nutrient-rich soil that the vitality of all organisms is at risk. As a result, crops may be genetically equivalent to their ancestors, yet their nutritional values have become distant clones. Studies indicate that one must eat 8 oranges to get the same amount of Vitamin A available 1950s' oranges, because heavy watering dilutes the nutrient levels of today's densely-planted crops. Apparently, today's meat provides only half as much iron, apples 1% the Vitamin C, and broccoli 25% the calcium of yore. My concern here is not that today's crops are less nutritious, but that even farmers seem to have forgotten that crumbling rocks enrich the soils that feed their crops. Moreover, it seems odd that something so obviously life enhancing is considered *inert*. And food is just the most basic way that rocks sustain organisms.

There seems to be an obvious contradiction afoot. If an organism's survival depends on rocks' availing it minerals and nutrients, then perhaps rocks, and thus Earth, should be reclassified (along with water and soil) as living. Even if rocks neither sexually reproduce nor consume nutrients, they are constantly acted upon and react to environmental forces, which suggests agency. Plants reach toward sunlight, while rocks respond to and generate energy. The primary argument against their

being considered living concerns their inability to reproduce. Akin to cell division, rocks break down into smaller bits, while mineral growth enlarges rocks over time. It thus seems particularly relevant that scientists are revisiting the 70s-era theory that postulates that Earth is alive, a theory that originated as the roundly-mocked "Gaia hypothesis."

First mentioned in 1972 by British Chemist James Lovelock, the Gaia Hypothesis was further developed by American biologist Lynn Margulis, who modeled Earth biologically, like "a body sustained by complex physiological processes" (Jabr 2019). Those who view Earth as a single self-regulating system recognize that "there is a feedback between the living and nonliving parts of the planet that make the planet very different from what it would otherwise be," notes astrobiologist David Grinspoon. Adopting this approach reconnects rocks and soil to nutrients, crops, and species well-being, plus it frames Earth as alive, and thus warrants greater planetary respect. The main reason scientists are revisiting the Gaia hypothesis is that it emphasizes the responsibility of human beings.

Even so, most people fail to notice Earth's "aliveness." Science writer Ferris Jabr remarks, "If Earth breathes, sweats and quakes—if it births zillions of organisms that ceaselessly devour, transfigure and replenish its air, water and rock –and if those creatures and their physical environments evolve in tandem, then why shouldn't we think of our planet as alive" (Jabr 2019)? As Lovelock understood, "We are a part of this Earth and we cannot therefore consider our affairs in isolation. We are so tied to the Earth that its chills or fevers are our chills and fevers also" (Jabr 2019). One problem is that science has yet to precisely define "life," though it lists its qualities. As Margulis realized ages ago, "Earth has a highly organized structure, it consumes, stores and transforms energy and might even be a contender for procreation, though more as a host." Grinspoon adds, "Life is not something that happened on Earth, but something that happened to Earth (Jabr 2019).

I had hoped that a *New York Times* article entitled "The Earth is Just as Alive as You Are" would put to rest Earth's remaining "rocks-alive" skeptics, but it seems to have had the opposite effect. It probably doesn't help that Margulis is quoted as describing Earth's living and nonliving elements as "parts and partners of a cast being who in *her* entirety has the power to maintain our planet as a fit and comfortable habitat for life." Any reference to Earth as "her" gives scientists a valid reason to reject the Gaia hypothesis, since framing nature as feminine has already engendered dire environmental consequences. Imagine tourist advertisements. Characterizing Earth as a "procreative she" not only encourages the objectifying human gaze, but it unwittingly casts nature as exotic, passive, submissive, and readily available for human consumption, as if "she" is regenerative like starfish and spiders. Lovelock rather aimed to say that "life transforms and in many cases

regulates the planet." To lure more scientists into their orbit, Gaia scientists must recast yesteryear's attractive "it girl" as today's active, fit "it."

Art Rocks!

In 2007, I started researching "art farms" for the book to accompany "Green Acres: Artists Farming Fields, Greenhouses, and Abandoned Lots" (2012). Over the next five years, I learned that most artist-farmers treat rocks as living beings. That rocks are special is hardly surprising, since people routinely collect beach pebbles. At some point, even bath shops and garden stores started selling stones for domestic display, which offers further proof of people's disconnect from nature. Ever since, I've casually surveyed friends and artists to discover whether they think rocks are alive. As it turns out, the responses break down quite easily…most sculptors and gardeners say yes, while most everybody else appears nonplussed. Swedish land artist *Marie Gayatri*, who often situates installations amidst rocks, imagines rocks as having a kind of slow-moving consciousness akin to deliberation.

At this paper's onset, I noted that collector *Roger Caillois* considered stones "unchanging." Being first and foremost a stone collector, it's unsurprising that he would appraise his prize possessions as static. By contrast, artists focused on process have tended to recognize stones as alive, changing beings that prove susceptible to external elements such as water, acids/bases, and forceful objects/energies. Over 100 years ago, Alexander Partens (Tristan Tzara's pseudonym) remarked how *Jean Arp* drew an analogy between stones breaking off a mountain and blossoming flowers and an animal "perpetuating" itself. *Andy Goldsworthy*, one of today's best-known land artists, reveres each stone as "alive, a deeply ingrained witness to time, a focus of energy for its surroundings." Karen Vermeren, a Belgian painter whose artistic PhD reflected upon her experiences within a 245 million-year old limestone quarry east of Berlin that is slated for depletion and closure by 2062 after 750 years of use, has watched stones literally change right before her eyes. Ils Huygens and *Karen Verschooren*, who curated "This Rare Earth-Stories from Below" (2018), characterize stones as active, but not dead.

John Dewey, who likely viewed rocks as inanimate, rooted nature's eventual order to a series of changes, including whatever external forces cause rocks to react and be acted upon.

> There is in nature, even below the level of life, something more than mere flux and change. Form is arrived at whenever a stable, even though moving, equilibrium is reached. Changes interlock and sustain one another. Wherever there is this coherence there is endurance. Order is not imposed from without but it's made out of the relations of harmonious interactions that energies bear to one another. Because it is active (not anything static because foreign to what goes on) order

> itself develops. It comes to include within its balanced movement a greater variety of changes (Dewey, 2005, p. 13).

Just as microscopic fertilized eggs propagate organisms, mountainous cliffs fracture into massive chunks, engendering large stones, some of which become boulders smoothed by erosion, leaving rocks to splinter into pebbles. And with the added push of plant roots, pebbles are grinded into powders to become micro-particles transported by birds and the wind. With the help of plant acids, pebbles crumble into particles that dissolve in water so that organisms, whether plants or animals, can easily ingest their mineral content.

To give artists who exhibit rocks as is (that is, neither cut, carved, inscribed, or incised) an art historical context, I next summarize several decades of artists' appreciating rocks as art. Artists who recognize rocks as precious objects are freed from having to carve stone into art, as sculptors have done for several millennia.

Sixties

In 1966, Donald Burgy presented his analysis of a stone's optical, geological and mathematical properties in *Konzeption* (1969). Between 1968 and 1971, *Robert Smithson* presented numerous nonsites, boxes of rocks and mirror/stone installations meant to refer to actual sites. During this period, *Roger Caillois* published *The Writing of Stones* and Mona-ha co-founder *Lee Ufan* started exhibiting stones as part of his ongoing Relatum series. Another Mona-ha co-founder *Nobuo Sekine* exhibited *Phases of Nothingness* (1969/1970), a giant boulder balanced atop an aluminum column at the 1970 Venice Biennale, now owned by the Louisiana Museum Sculpture Garden. He has remade this sculpture six times in JP, IT, and US.

Seventies

Smithson created *Broken Circle/Spiral Hill* (1971), whose sand bar half-circles circumscribe a glacial megalith. That same year, Gina Pane depicted the words Terre Protegee III in pebbles arranged on sand. In 1972, Richard Long generated his first stone circle in the Andes Mountains. For *Stones Sinking in Sand* (1976), Andy Goldsworthy sited a stone circle between tides near a stone line extending into the water at Morecambe Bay in Lancashire, UK.

Eighties

Aware of basalt's capacity to nourish oak trees, Joseph Beuys purposely buried basalt steles adjacent each of *7000 Eichen* (1982-1987) in Kassel, DE. Using stones gathered from Austria's der Inn (river), Lois Weinberger's *River* (1986) presents them bundled as one. For "Triadensystem" (1989), George Steinmann employed a pendulum to locate watercourses

and energies permeating Kunsthalle Bern. Richard Nonas installed *La Colonne Terminée III* (1989/1998/ongoing), a rock allée comprised of twenty pairs of boulders extending along a path leading visitors into the Beech Forest at Wanås Sculpture Park in Sweden.

Nineties
To create *Das Gleichegewist der Dinge* (The Balance of Things) (1992), a rock garden whose proportions resemble those of the Ryōan-ji Temple in Kyoto, JP, George Steinmann exchanged Swiss rocks with those from 45 sites on 5 continents whose place names reference Switzerland. To celebrate ten centuries of scholar's rocks, Harvard University Art Museums organized the touring exhibition "Worlds Within Worlds: The Rosenblum Collection of Chinese Scholar's Rocks" (1997-1998). Since 1997, Richard Nonas' 180' long double line of double boulders has graced Umedalens Sculpturpark in Sweden. For *SIK (Stones I've Known) Circle!* (1999), Austin Thomas exhibited hand-drawn stone portraits adjacent each owner's stone's story. That same year, Gauri Gill began *Traces* (1999-ongoing), her photographs of handmade stone gravesites. Richard Nonas sited *Stoneline* (1999/ongoing) in dialogue with the mountains at Mondsee Land Art (AT).

Aughties
In 2000, *Lara Almarcegui* started displaying the exact proportion of building's construction materials, including quarried rocks, gravel, and cobblestones. In 2001, *Alan Sonfist* piled 100.000 tonnes of boulders to protect boreal seeds growing in his chemical-free Secret Garden at Walker Botanical Gardens in St. Catharines, CA. From 2000 to 2003, *Ray Mortenson* photographed bedrock outcroppings near Jamestown, Rhode Island, US. *Rebecca Horn* exhibited *The Magic Rock* (2005), a kinetic sculpture whose crystal is encased in a rock box. In 2009, *herman de vries* presented 12 Found Stones on 12 Oak Pedestals (1996-2009), whose objects originated from France, Germany and Greece, and Spain.

Teens
In 2010, *Lara Almarcegui* started displaying demolition debris, which is roughly the same material, only now it is considered rubble. *Otobong Nkanga* has five-times exhibited *Taste of a Stone. Ikọ* (2010/2013/2015/2016/2018), an indoor rock garden featuring locally-sourced boulders; while *Ulrika Sparre* and *Steingrimur Eyfjord* researched the impact of ley lines crisscrossing Iceland. *Michael Heizer* suspended *Levitated Mass* (2012), a 340 ton granite megalith adjacent Los Angeles County Museum of Art. Soon after *Wilfredo Prieto* created *Two Stones and a Mirror* (2012), *Roger Caillois'* stone collection was featured in "The Encyclopedic Palace" (2013) at the Venice Biennale. For Frieze Sculpture Park, *Richard Nonas* placed *Wedge* (2014), a line

of boulder pairs in London's Regent's Park, as seats upon which to admire the trees. For *99 Stones* (2014), *Anita Dube* invited people to record week-long experiences living with particular stones selected from her set of 99.

Since 2015, *Ecole Mondiale* have charged quartz crystals with intentions, before burying them 100m apart along "locality grids" in Warsaw, PL (2015), Brussels, BE (2016), Sittard, NL and Port-au-Prince, HT (2017). Richard Turner curated "Petraphilia: the Love of Stones" (2015), which paired "viewing stones" from three collectors with stone-inspired artworks by eight artists at the Fellows of Contemporary Art Space in downtown Los Angeles, CA. After intervening on a black dolerite quarry in Svarta Bergen, SE with text art in 2015, *Ulrika Sparre* started making field recordings of stones and rocks found in South Africa's landscape, which led her to present 21 red rocks atop wooden columns, effectively honoring the past lives of slaughtered South African cows. In 2016, *herman de vries* started exhibiting found sculptures such as stone fragments arranged on the floor as a grid, ten pebbles originally collected in 1973 in Morocco, seven flat white pebbles collected in Korfos, GR, a circular floor installation jammed pack with Danube River rocks, and a drawing featuring 117 different stone samples. His 2018 collage features 77 marble fragments, pocketed from *Lee Ufan's* 2011 installation at Palazzo Bembo in Venice, IT affixed to a sheet of paper.

In 2017, *Karen Vermeren* started using imagery culled from Rüdersdorf, a limestone quarry 25 km east of Berlin, as source material; while *Ulrika Sparre* made field recordings of land in and around Darmstadt, DE. *Laura Ögel's* installation *houses were rooms, i had forgotten (variation II)* (2017) featured shiny, hard surfaces (ceramics, gemstones, and river-polished rocks) embedded in soil and grass. *Alicja Kwade* presented *WeltenLinie* (2017), a sprawling installation comprising stones, petrified wood, and mirrors at the Venice Biennale. For *Deep Time Geology* (2018), *Miguel Sbastida* sited scores of limestone rocks, visibly rippled by shallow underwater currents nearly 200 millions ago, in a hermitage in Spoleto, IT.

Curated by *Ils Huygens* and *Karen Verschooren* for Stuk in Leuven, BE; "This Rare Earth-Stories from Below" (2018) featured artworks by eighteen artists/teams indicative of "geological thinking." For *Untitled (Water Erosion)* (2018), *Gala Porras-Kim* drips water on a giant hunk of alabaster, set to disappear over her lifespan. *Ulrika Sparre* sited *Female Energy Point* (2018), a boulder whose carved symbol refers to the energy emanating from its hilly locale at Artipelag, a coastal retreat built atop a massive, 2 billion year-old glacial rock, east of Stockholm, SE. After burning 50kg of various invasive species, *Jean-François Paquay* and *Rebecca Chesney* produced six distinct ash glazes, whose surprisingly colorful outcomes reflect their mineral contents. Present in "Coexistence" (2019) at Kiasma in Helsinki, FI, *Sari Palosaar's Time is Out of*

Joint 1 (2018) juxtaposes a cracked boulder with an imploding one. "Art rocks" are *de rigueur*!

Rocks' Animate Features

British author/neuroscientist *Oliver Sacks* recalls a lady from Guam with Parkinson's Disease, who was unable to initiate movement, yet when she entered a garden with plants and rocks, "she was galvanized by this, and could rapidly, unaided, climb up the rocks and down again" (Sacks 2019). Something jogged her memory and/or motorized her legs. Could it have been the rocks? Perhaps energies emanating from nearby rocks sparked an otherwise infirm person, much like electricity propelling trains, sparks igniting car engines, or quartz vibrations' regulating watches. Philosopher *Susanne Langer* lists several bioelectric mechanisms that regulate human organisms, though she calls them metabolic patterns: "[s]ystole, diastole; making, unmaking; crescendo, diminuendo. Sustaining, sometimes; but never for indefinite lengths; life, death" (Langer, 1953, p. 99). Human memory is also regulated by bioelectric mechanisms, complex feedback loops run by electro-chemical reactions involving minerals.

According to the American Institute of Physics, "the vibrational motion of an atom in a crystal propagates to neighboring atoms, which leads to wavelike propagation of the vibrations throughout the crystal. The ways in which these natural vibrations travel through the crystalline structure determine [the] fundamental properties of the material" (2018). As Pythagoras discovered, each stone's pitch reflects its vibrational frequency (Langer, p. 104), engendering material properties, such as thickness, form, color, and even healing attributes such as sleep aids, stress relief, memory recall, etc. Absent such vibrations, matter remains inanimate. People who associate crystals with particular healing properties believe that wave propagation continues across distances like WiFi, which is why they hold, sleep, or wear particular stones.

It thus seems that rocks not only nourish plants and animals, but they charge their environments, which explains their prevalence in gardens; significance as gardens, as in Zen rock gardens; and effectiveness as Chinese scholar's stones. Even the Linnaeus Garden's plant beds in Uppsala, SE are replete with small rocks, so Linnaeus likely recognized rocks' charging properties. In addition to recording rock sounds, *Ulrika Sparre* has researched energy fields known as ley lines, whose convergences reflect "high points of energy or high concentrations of electrical charge," typically marked by rock monuments or rock buildings. Is it coincidental that the most famous ley line, the Saint Michael & Mary originating in Cornwall, supposedly extends through southern Sweden, while local ley lines are said to intersect Uppsala's old town?

Having described the symbiotic relationship between rocks and organisms, plus the recent spurt in "art rocks," I now attempt to philosophically frame "art rocks" as animate. As already described, rocks exhibit pulses, vibrations, oscillations, and frequencies; otherwise

inaudible features that *Ulrika Sparre's* invaluable sound recordings register for posterity. Foreshadowing the Gaia hypothesis by 35 years, John Dewey wrote, "The career and destiny of a living being are bound up with its interchanges with its environment, not externally but in the most intimate way….Here in germ are balance and harmony attained through rhythm" (Dewey, 2005, pp. 12-13). But what on Earth is rhythm? Rhythm reflects the relations between the "doing and undergoing of organism and environment whose product is an experience" (p. 166). Dewey defines rhythm as an "ordered variation of changes. When there is a uniformly even flow, with no variations of intensity or speed, there is no rhythm….[C]hange not only comes but it belongs: it has its definite place in a larger whole….There is no rhythm of any kind,… where variation of pulse and rest do not occur" (Dewey, pp. 160-161). And energy exchange is paramount.

> A gas that evenly saturates a container, a torrential flood sweeping away all resistance, a stagnant pond, an unbroken waste of sand, and a monotonous roar are wholes without rhythm. A pond moving in ripples, forked lightning, the waving of branches in the wind, the beating of a bird's wing, the whorl of sepals and petals, changing shadows of clouds on a meadow are simple natural rhythms. There must be energies resisting each other. Each gains energy for a certain period, but thereby compresses some opposed energy until the latter can overcome the other which has been relaxing itself as it extends….There is, at the moment of reversal, an interval, a pause, a rest, by which the interaction of opposed energies is defined and rendered perceptible (p. 161)

Not surprisingly, Dewey discusses neither nutritious minerals nor cliffs offering rocky habitats. Echoing Dewey's idea of rhythm, Langer continues, "The most characteristic principle of vital activity is rhythm. All life is rhythmic; under difficult circumstances, its rhythms may become very complex, but when they are really lost life cannot long endure" (Langer, 1955, p.126). She continues, "The essence of rhythm is the preparation of a new event by the ending of a previous one (p. 126). She defines rhythm as "the setting-up of new tensions by the resolution of former ones. They need not be of equal duration at all; but the situation that begets the new crisis must be inherent in the denouement of its forerunner" (Langer, p. 127). She offers breathing as exemplary of physiological rhythm. Although Langer never mentions Dewey, she considers the "principle of rhythmic continuity the basis of that organic unity which gives permanence to living bodies- a permanence that….is really a pattern of changes" (p. 127). Like Dewey, Langer recognizes rhythm in inorganic things, yet she considers it merely a symbol of living forms.

> [S]uch genuine rhythms [are] in inorganic nature, too; rhythm is the basis of life, but not limited to life. The swing of a pendulum is rhythmic,

> without our organizing interpretation…The kinetic force that drives the pendulum to the height of its swing builds up the potential that will bring it down again; the spending of kinetic energy prepares the turning point and the fall….But the most impressive example of rhythm known to most people is the breaking of waves in a steady surf….Such phenomena in the inanimate world are powerful symbols of living form, just because they are not life processes themselves. The contrast between the apparently vital behavior and the obviously inorganic structure of ocean waves, for instance, emphasizes the purse semblance of life, and make the first abstractions of its rhythms for our intellectual intuition (p. 128).

If one accepts the Gaia hypothesis' main point that organisms impact their environments, just as environments impact organisms, then waves transferring energy are hardly symbols of living forms, but are real forms. Interestingly enough, Dewey and Langer both discuss this, though only as it applies to artworks, yet they draw opposite conclusions. In characterizing the rhythm of art, Dewey writes, "Underneath the rhythm of every art and of every work of art there lies as a substratum in the depths of the subconscious, the basic pattern of the relations of the live creature to his environment" (Dewey, 2005, p. 156). Dewey explicitly connects each artwork's rhythm to its creator, the artist/dancer who produced something indicative of his/her rhythm. This notion easily applies to rocks, whose vibrations charge adjacent organisms, and especially those that move artists to present them as art. For philosopher Carlos Vara Sánchez, rhythm is not a signal but an "affordance for movement," which "art rocks" inevitably manifest. Alternatively, Langer claims that art only "seems essentially organic; for all vital tension patterns are organic patterns" (373).
She continues,

> It must be remembered, of course, that a work of art is not an actual organism, but presents only the appearance of life, growth, and functional unity. Its material constitution is either inorganic, like stone, dead organic matter like wood or paper, or not a "thing" at all. Music is a disturbance of the air. Poetry is the same, unless it is a trail of ink? But just because the created appearance is all that has organic structure, a work of art shows us the appearance of life….And because art is a symbolic representation and not a copy of feeling, there can be much knowledge projected into the timeless articulated form of [an artwork] (p. 373).

Contra Langer's claim, "art rocks" are real things and are thus more than symbols,. To my lights, Dewey's approach makes more sense, since for him artworks have a rhythm that ties to their producers, which means that their animate features are real, not mere "appearances of life."

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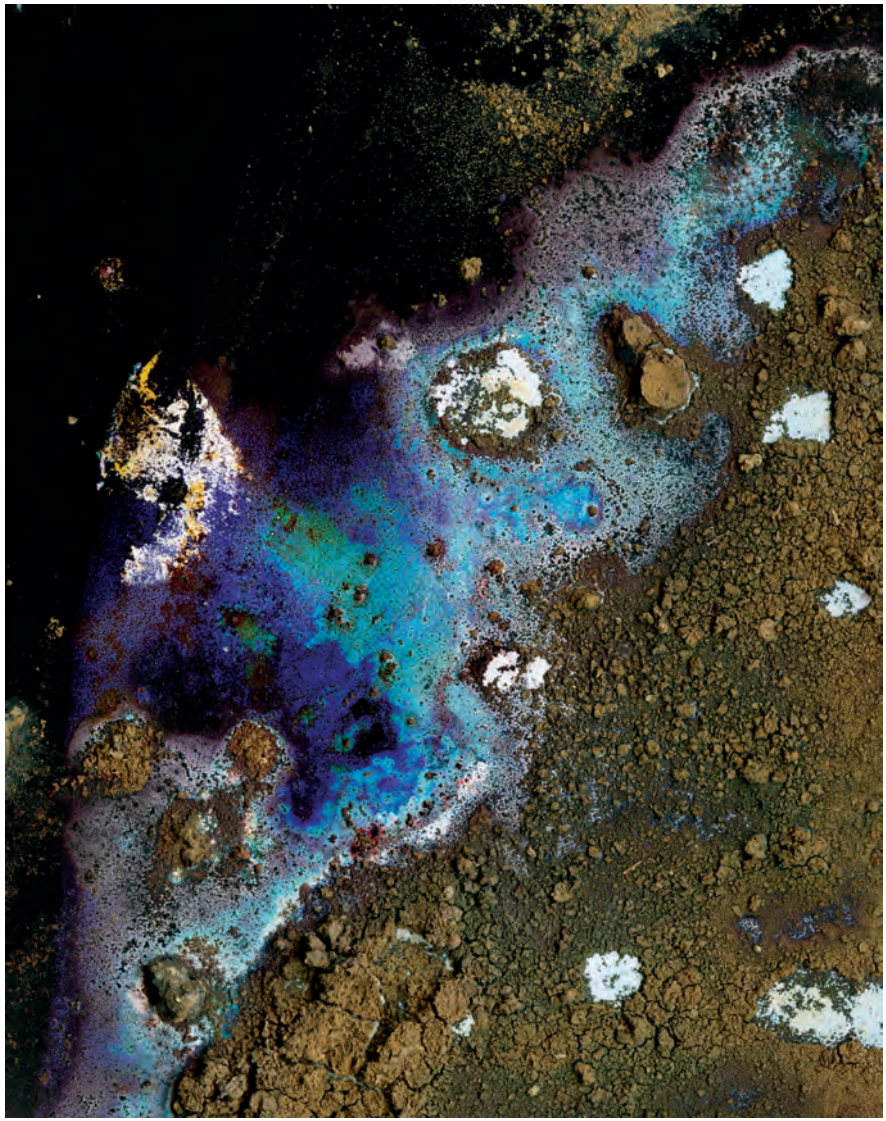
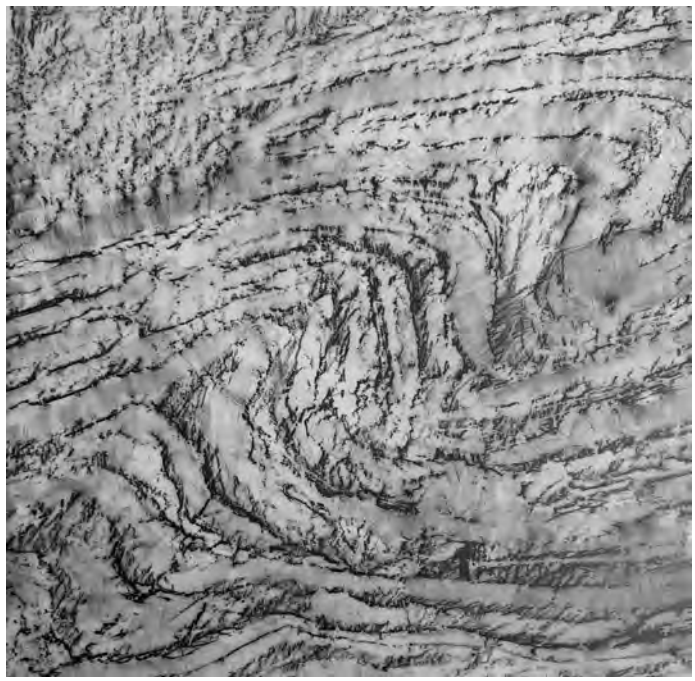
Lauren Davies, *Cascade*, 2017, tapestry, collage, 98 × 92 inches

Renata Buziak, *Strathalbyn Gully 5*, 2018, soil biochrome, archival pigment print on paper, 17 × 11 inches



← Alexander Heilner, *Colorado River Dominy Deposits*, October 2022, photograph, dimensions variable
↘ Laura Ahola-Young, *Iron Formation 2*, 2021, graphite on Arches paper, 18 × 18 inches



Love Letters: extinction ≥/≤ love
Valerie Constantino

There is a logical connection between the Anthropocene Epoch and the sixth mass extinction, currently in play. Environmental conditions precipitating the earth's five previous extinction events had factors in common with today's pernicious climate. Now though, conditions such as surging greenhouse gases and ocean acidification are generated and compounded by anthropocentric, that is, human activity. In consequence, dozens of species are lost each day, at a rate of 1000 to 10,000 times higher than the baseline, or naturally occurring rate.

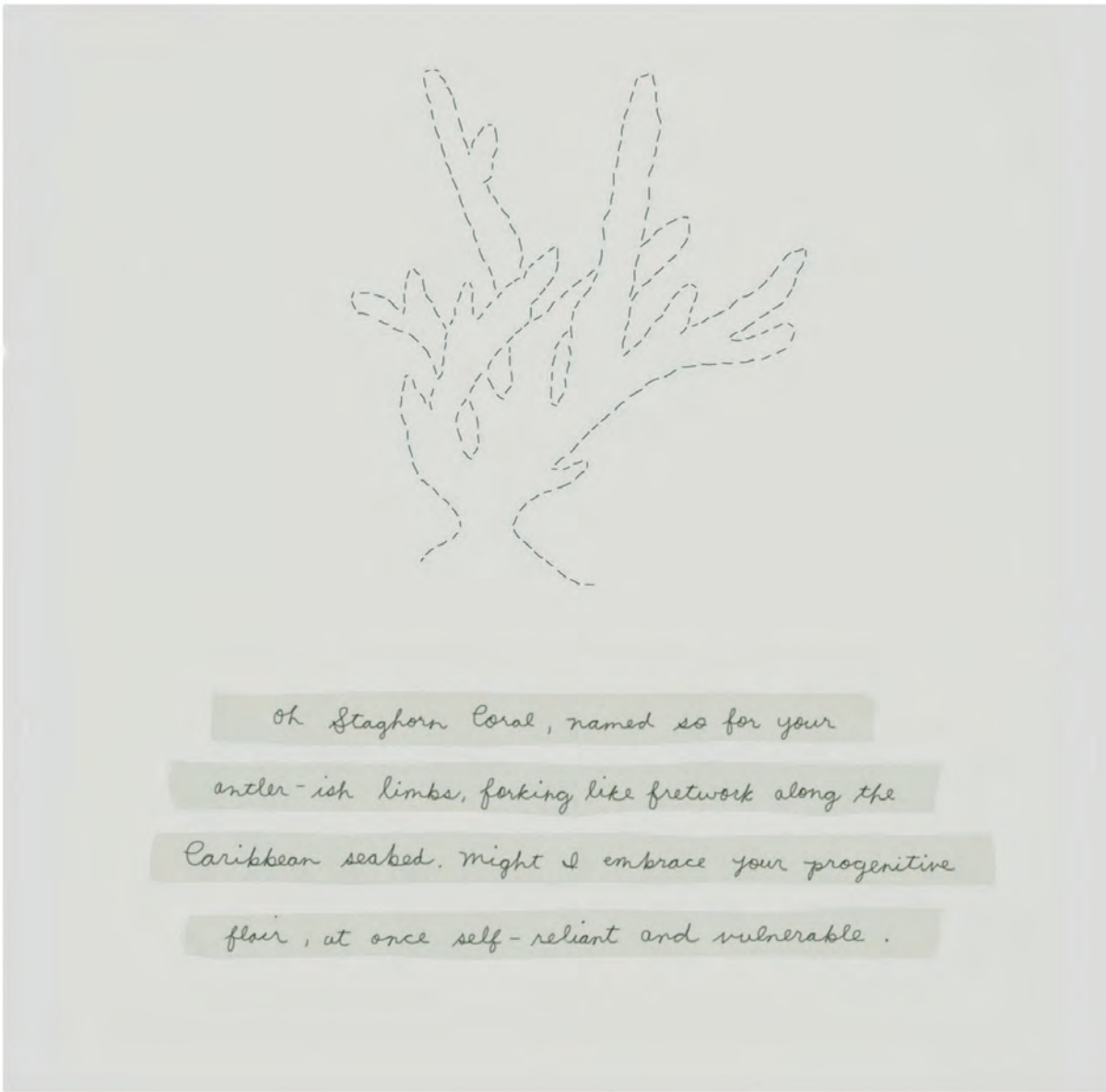
According to The International Union for Conservation of Nature (IUCN) Red List, there are now more than 42,000 species threatened with extinction throughout the world; 9000 of them, critically so. In reverence to the distinct qualities and susceptibilities of individual species, I made a series of works entitled *Love Letters* (2019-2022). It consists of a series of linen panels representing an indicative selection of Critically Endangered and Extinct in the Wild species. Ranging geographically across the globe, *Love Letters* references all classification groups including mammals, reptiles, amphibians, birds, fish, insects, plants and trees.

On each linen panel, a simple contour drawing of a species was traced and then stitched with vanishing thread. A love letter, or ode to the pictured species was hand written on rice paper with ink made from chlorophyll, then incorporated onto the linen. Each panel was subjected to atmospheric elements, to water and light, precipitating the deterioration of both image and text, metaphorizing the fragile state of its pictured species. Before and after versions of each panel were documented and juxtaposed as photographic diptychs.

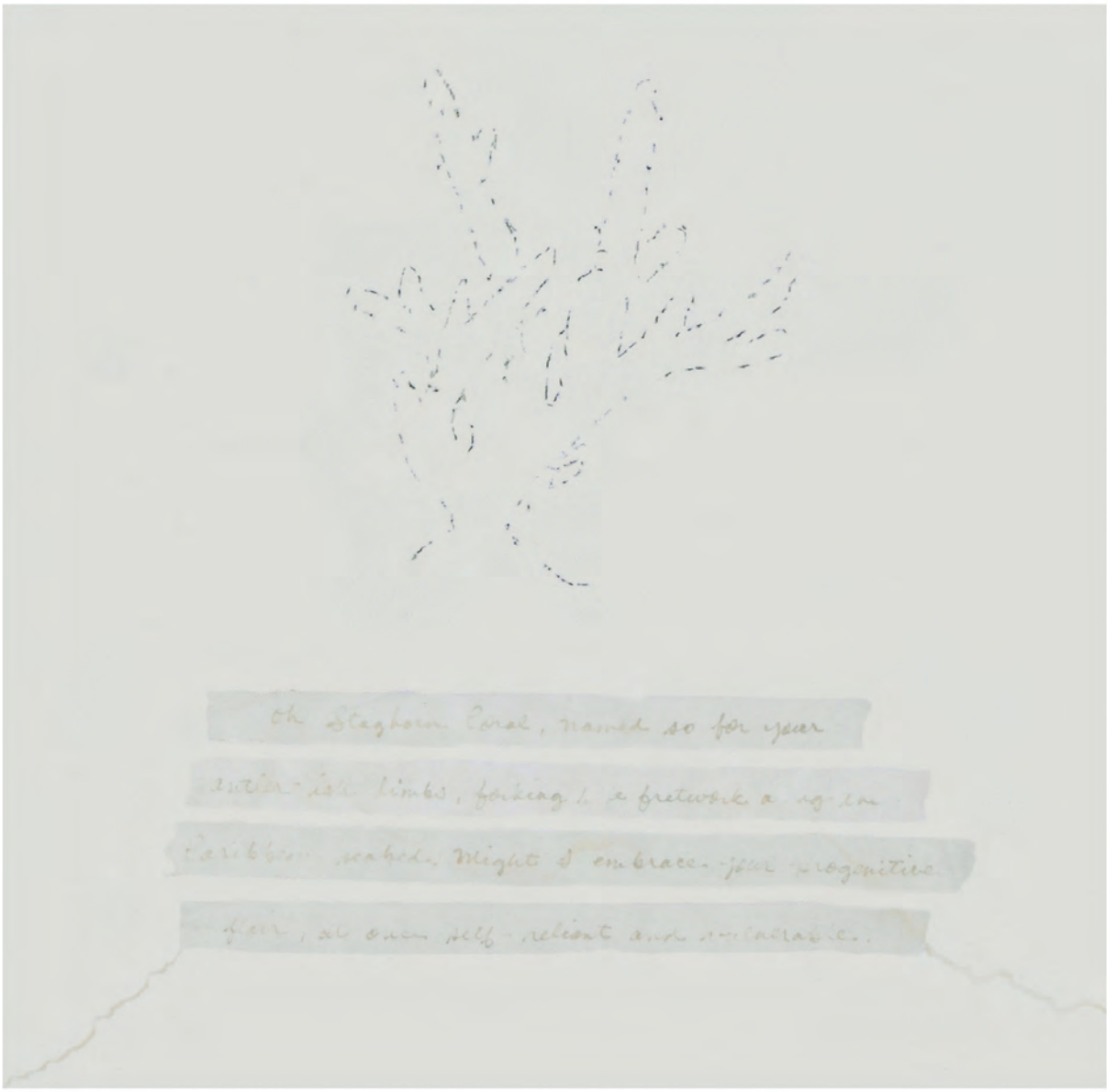
Initially, the project was conceived of in response to the weakening of the Endangered Species Act (ESA) by the 2016-20 United States government administration. Those revisions prevented ESA regulators from considering the effects of climate change when assessing new or existing protections for vulnerable wildlife. Simultaneously, they were required to factor the economic impacts on oil, coal and other polluting industries into their final evaluation

First signed into law in 1973, the ESA represents our national commitment to protect the most vulnerable of the earth's flora and fauna. Terry Tempest Williams writes: *The beauty of the Endangered Species Act is that it is a federal act of empathy, put into writing and upheld by law. It is an elegant act of mind and heart that is both visionary and inclusive*.

Through its synthesis of image-making, writing, material process and evidential research, the *Love Letters* project mitigated and concretized my sense of urgency and dismay. The drawn or stitched line occurs as an exploration of substantive form; an interpretative, palpable experience of an other. Similarly, poetry arises materially, as a dynamic network of utterance and sign. These vocabularies are visceral and sensual, as if scrabbling the edges, surfaces and interiors of that other, forging intimacy while recording sensations in graphic and textual code.


Oh Staghorn Coral, named so for your
antler-ish limbs, forking like fretwork along the
Caribbean seabed. Might I embrace your progenitive
flair, at once self-reliant and vulnerable.

Valerie Constantino, *Love Letters, Staghorn Coral*, 2020–22, photographic diptych (original linen panel juxtaposed with deteriorated outcome), 8 × 16 inches each


Oh Staghorn Coral, named so for your
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Caribbean seabed. Might I embrace your progenitive
flair, at once self-reliant and vulnerable.

One photographic diptych from the series, *Love Letter, Staghorn Coral*, is presented here with this writing. For thousands of years, Staghorn Coral has contributed to building the extensive coral reefs of the Caribbean Seabed. Its densely packed thickets provide essential habitat for numbers of other reef animals and tropical fish. Since the 1980s its population has dropped by approximately ninety-seven percent. Climate change and its attendant warming of the ocean waters, effects its most serious threat. The unnaturally warm water causes the corals to expel their resident algae, leading to bleaching and very likely, their demise. Ocean acidification and salinization, unsustainable fishing and boating practices, invasive species and land-based pollution also contribute to their acute decline.

Continuing efforts to regulate and manage coral reefs are helping to stave off their extinction with restoration projects worldwide, signaling extraordinary acts of compassion. While it is rare for corals to be cared for by humans, The Florida Coral Rescue Center for example, houses rescued corals in a protected location. Within this safe environment, scientists study their distinctive needs and biological behaviors, towards their eventual repopulation in the wild.

As celebrated in its Love Letter, Staghorn Coral along with many other coral species, has the astonishing capacity to reproduce asexually and are also considered broadcast spawners. This bringing-into-being occurs en masse as a synchronized event, when all the species of coral in proximity release their gametes at about the same time. Singularities such as this are everywhere to be found among earth's myriad forms of life. Beyond beauty, there is staggeringly fantastic strangeness, complexity and wit, eliciting ardent appreciation and love.

…The great consequence of the Endangered Species Act is that it ensures that we, as a species, will not be alone. We will remain part of a living, breathing, thriving community of vibrant beings with feathers, fins and fur; roots, petals and spines; and trunks, branches and leaves…Wild beauty will be maintained.
—Terry Tempest Williams

Returning to the Endangered Species Act and to the equation of this essay's title. Despite several critical fails on proposed environmental policies, our current United States government administration has taken the anticipated steps to undo the undermining of the ESA by the former. Still, legislative processes are distressingly slow and there remains as well, a faction of influential conservatism, antagonistic to these efforts.

The equation of this essay's title illustrates the uncertainty of our current state. Specifically, it asks if the threat of extinction, including our own, is greater than, less than or equal to our capacity to love? On the side of extinction, Elizabeth Kolbert writes: *The world is*

on track for disasters on a scale that humans have never before experienced. Scientists keep warning us to get off this track, and yet we seem unable—or, at least, unwilling—to do so. The tragedy of this epoch is its emphasis on self-interest and other related, apparently human characteristics, that counter sustainable unions with the natural world and one another.

Conventionally, a love letter articulates one's heartfelt regard for an other; it may lyricize the attributes or lament the absence of that other. As an expression of longing and love, such a missive may evoke one's hope in a shared future. The process of making the Love Letters offered me a site for empathy and resolve. And I performed their designated undoings, like Penelope, in hopes of buying time. As our acts of creativity, conservation and solidarity persist, we tilt to that other side of the equation, testing our capacity for love, nudging the inevitable towards the recoverable.

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Endangered Species Act of 1973, 16 U.S.C. §1531-1544.

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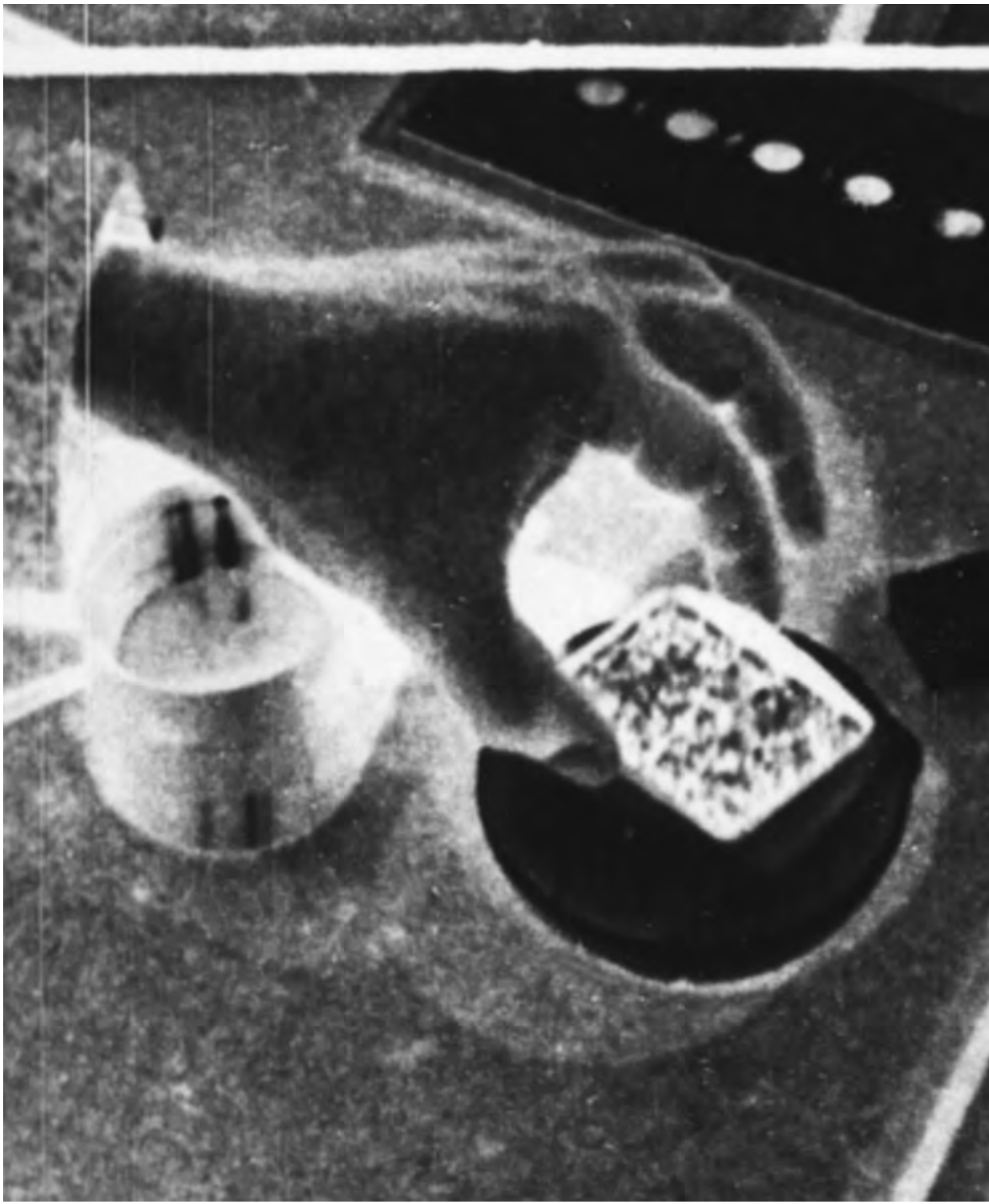
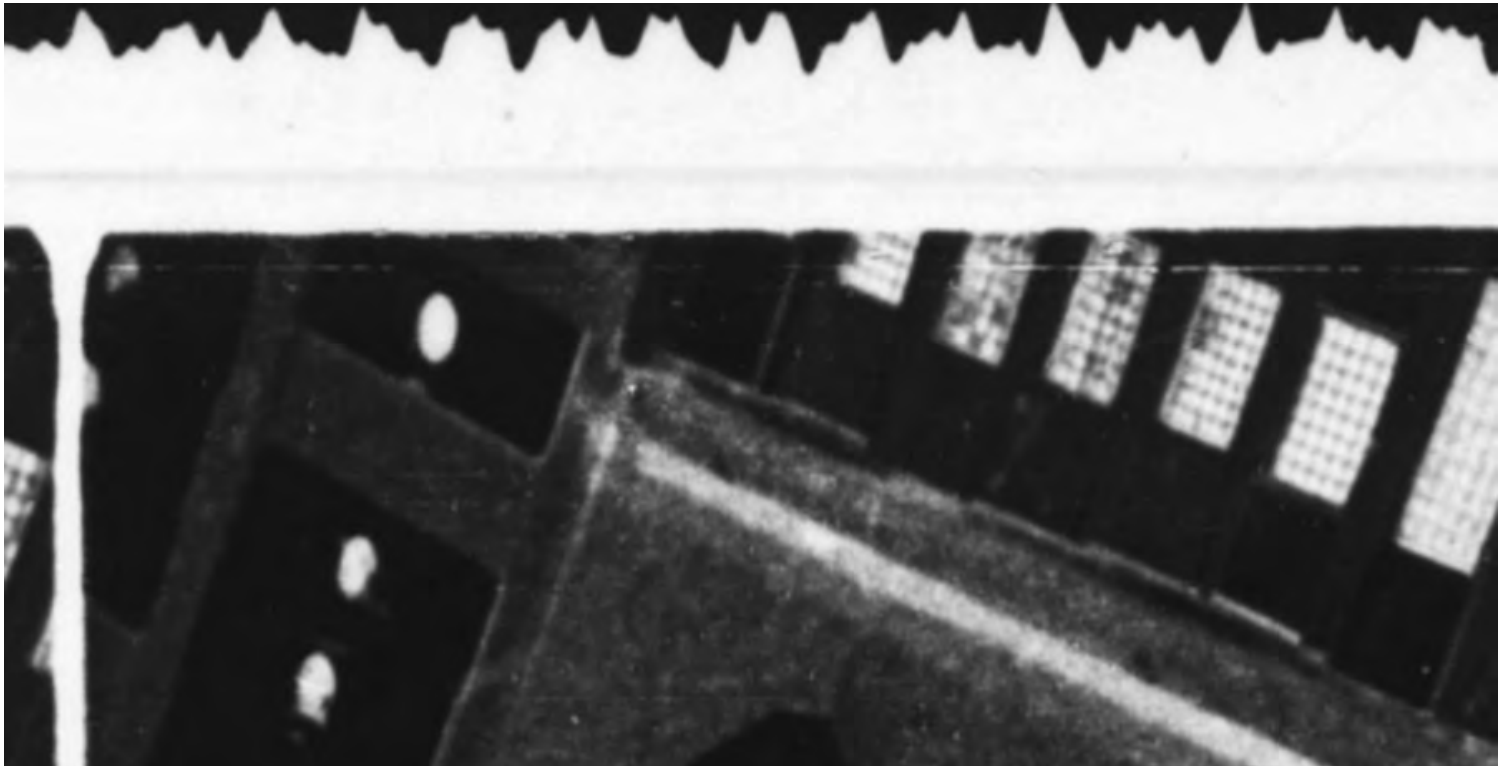
Mary Babcock, *11° 4′ 50″ N*, 2021, salvaged fishing nets and lines gathered from across the Pacific Ocean, Lucite, aluminum, deep sea leader line, 92 × 44 × 3 inches



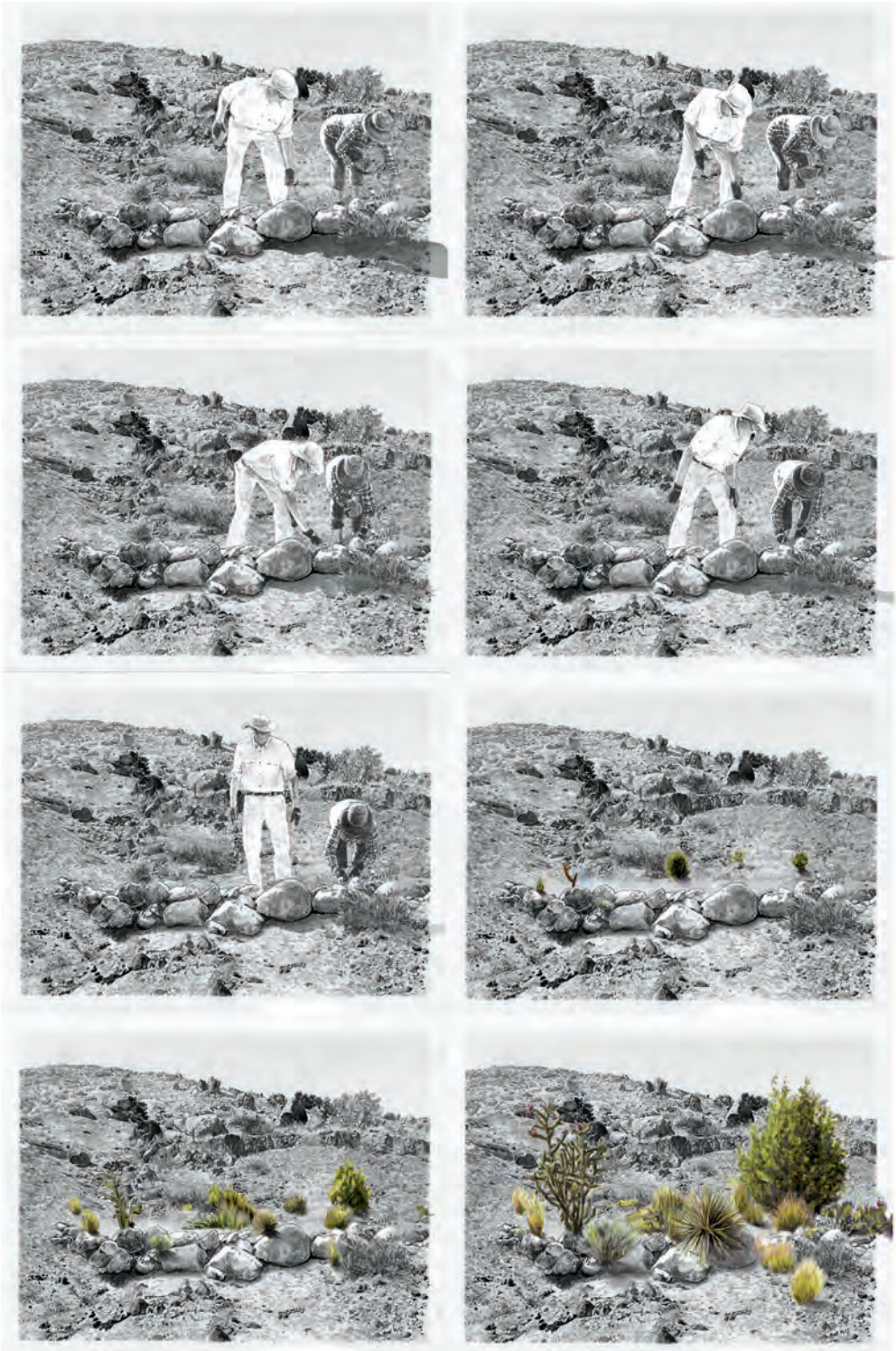
Rachel Guardiola, *Into the Zone (Anthology of Accounts + Findings)* (still), 2015, 16mm film, projection, hand cranked optical soundtrack, vitrines, natural history objects, 5:30 mins/secs



Tom Hansell, *Plastic Confluence 3* (still), 2022, salvaged plastic shopping bags and barrel hoop, 34 × 34 × 2 inches, from *The Trash Trout Motion Picture Show*, 2022, 16mm motion picture film, plastic refuse, live performance, 9:37 mins/secs; *Film Vines*, 2022, 16mm film strips, salvaged plastic, beaver sticks, 50 × 48 × 2 inches

E Tyler Burton, *Chino Canyon*, 2020, found plastic, recycled paint, repurposed concrete aggregate, cement, resin and hydrocal, 98 × 18 × 18 inches

Bill Gilbert, *500 Dams: towards a return of Anaya Springs*, 2003–present,
multimedia installation with rocks, dirt, water, plants, satellite imagery, animation, photography,
drawing, watercolor, ceramics



Rosalind Lowry, *The Heartbeat of Trees/El Latido del Corazon de los Arboles*, December 2022, moulded and acrylic wire, salt soaked dead trees, installation sited on flooded shores of Lake Epecuen, Argentina, 50 feet long

Betsy Damon, Depending on the Weather: *Fire and Water*, 2023, collage, 13 × 19 inches

SE Bachinger, *Anthropo/Scapes:* No.1, 2020, archival pigment print, 18 × 24 inches

Brown—A colour of complex imprecision

Samantha Lang

"Thinking brown pushes us into hybrid spaces that span living and nonliving matter, aesthetic values and biological drives."
—Steve Mentz

There are many brown lakes in Australia. The Brown Lake I am writing about demonstrates 'a hybridity that frustrates order making systems' and compels me to think about how screen practice might connect 'the living, non-living matter, aesthetic values, and biological drives' (Mentz 2013, p. 193). The very naming of this body of water as 'brown' hints at a hybrid of cultures, human and non-human, Aboriginal and settler, living and dead. Boumiera is the Aboriginal spirit name of this place[1], whilst brown is the colonial way of naming the lake. For millennia this carrier of water and life was identified by its spirit name, but more recently by its 'colour name'. Brown acts as a colour of complex imprecision in the analogous context of Brown Lake's water, as well as in the context of skin colour; there are so many shades of brown. Human visitors to the lake – Indigenous, foreign, migrant, or colonial –and their purposes there provoke reasons to closely interrogate what the valency of brown is, as well as ask what makes something brown? One day while filming, I overhear a pale-skinned swimmer say as he entered the lake, 'This brown water is weird', and yet, as Mentz (2013) commented, 'To be brown is to be human; there is no nonbrown strain of human pigmentation' (p.194).

Brown Lake likewise carries different browns in its water: pale, mid tone, and dark. It also contains those stratigraphies described above: warm, cold, and anoxic. When you take a glass of water from the brown lake, it is less brown and almost transparent; the staining by the tannin from tea-trees disappears up close. All these observations connect to questions around not only what the aesthetic practice of 'thinking brown' might reveal, but also what multiple subjectivities it might blend. How might *thinking brown* open up different worlds to the ones previously seen, heard and experienced? How to communicate that on screen? And what does the blending of separate elements, a process that reflects the craft of producing filmic forms, offer up as an *otherwise* arrangement that Brown Lake might reveal? Focusing on the organic and inorganic nature of brown, literature professor Steve Mentz (2013) notes:

> Drawing brown out requires extracting sense from stinking goo. It comes at us from both sides of our world, the living, and the dead… Brown is the colour of intimate and uncomfortable contact between human bodies and the nonhuman world. (p. 193)

The stinking goo of brown challenges the view that narrows and excludes non-living and dead matter as something separate from our living human selves. It opens up possibilities of writing into exis-

1 There are many different spellings for Brown Lake (Stradbroke Island): *Bummiera, Boumiera, Bamira*, etc. The Jandai Language Dictionary suggests using whichever one you prefer. *Jandai Language Dictionary* (Dunwich, Qld.: Minjerribah Moorgum in Elders-in-Council Aboriginal Corporation, 2011), 37.

tence entities beyond the human. It insists on the presence of multiple subjectivities. It suggests endurance. Brown's complexities resonate with the hybrid position I am in as I search to situate the agentic subjectivity of Brown Lake on screen. 'Thinking brown' goes beyond the human and asks us to consider how the act of extracting sense from the 'stinking goo' can make visible the temporal and embodied relations across layers and lines of being and non-being. In this hybrid world, all encounters, joinings, and dispersals are temporary. We cannot go away, and we cannot connect forever either (Mentz 2013). The lake is neither wholly connected nor entirely independent to those it is assembled with. Life and non-life are endlessly in dialogue with each other.

Beyond the human lies an ecosystem that runs through Brown Lake: an interplay of dead brown matter in the form of fallen tea-tree leaves and decaying bodies, lace monitors, keel back snakes, rare acid frogs and others that act as a nourishment for the live plants and animals that populate the area. Brown, often seen as a dull, is the colour of matter that animates life.

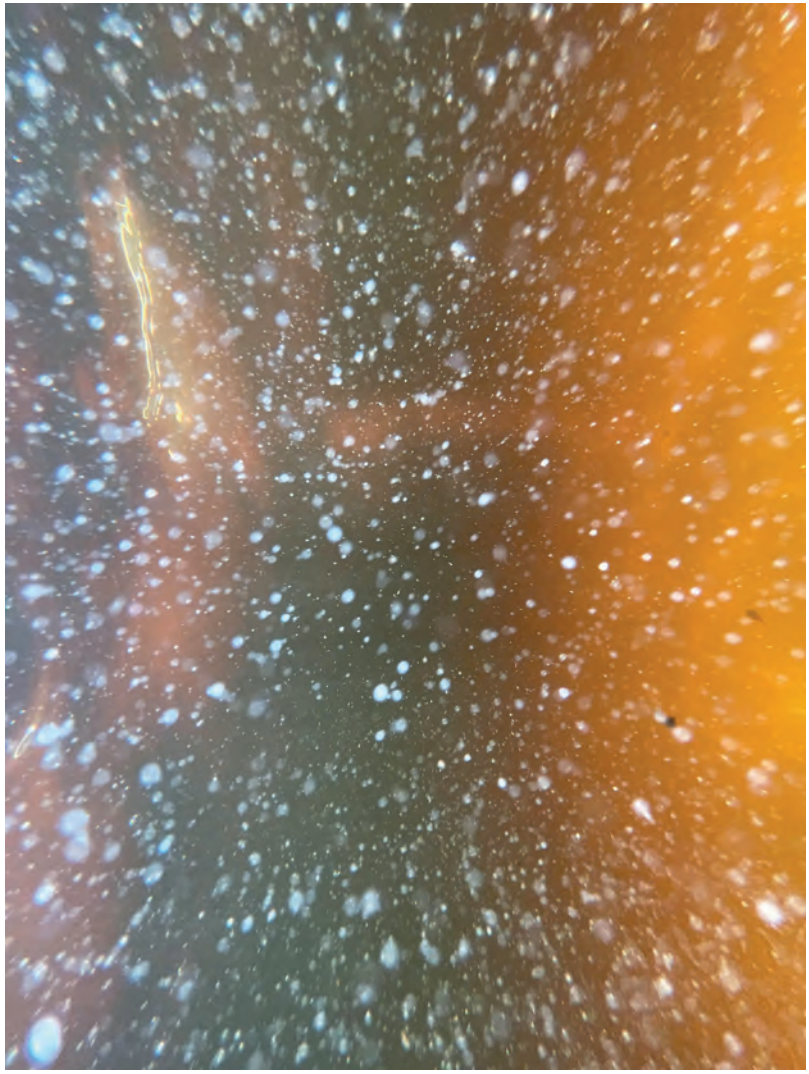
In September 2010, long before this this essay was written, I sat at Brown Lake for the first time, on pale white sand, amongst the sedges, with friends from the island. I listened to them explain the significance of the body of brown-tinged water that lay before us. Brown Lake on Stradbroke Island was once known as Boumiera on Minjerribah by its first human inhabitants. Of cultural significance to the Quandamooka people who compose the Dandrubin, Gorenpul and Noonuccal tribes, it is a lake that in local traditions only women can speak about, and a place only women and children should visit. The protocol for entering the dark water involves a female elder singing out in Jandai language to the lake and waiting for a sign from the lake that it is safe for her and her children to do so. This ritual demonstrates respect for the spirit of the lake and Mother Earth – a recognition that the spirit is in presence, the ancestors are in presence and that they can hear you. A decade later, with native title, though not sovereignty, restored to the Quandamooka people a Burning Ceremony was held here. An elder named Evelyn Parkin celebrated the first women's cultural burn at the lake in many years. She explained to those assembled:

> You would speak in language to the spirit – if there was a sign like ripples that meant 'no' they would turn you around and go home. We believe in spirit and in the ancestors. They hear everything we say, and they know who you are.[2]

In scientist Donna Haraway's (2008) words, 'The truth or honesty of non-linguistic embodied communication depends on looking back and greeting significant others, again and again' (p.27). This is a practice Haraway describes in *When Species Meet* (2008) as *respecere*, meaning a co-constitutive natural cultural dancing, holding in esteem,

2 "Women gather for special cultural burn on Minjerribah," Queensland Government Department of Environment and Science website, issued July 27, 2020.

Samantha Lang, *Brown Lake/Boumlera* (still), April 2021, film, 14:15 mins/secs



and regard, open to those who look back reciprocally. 'Always tripping, this kind of truth has a multispecies future' (p. 27). This kind of truth also has a multispecies past, one where the notion of respect amongst beings and non-beings was a regular part of greeting rituals – a call and a response acknowledging the co-existence of entities.

My friend at the lake that day in 2010 is a Gorenpul elder from Minjerribah. His wife is of Anglo-Indian heritage and grew up the nearby locality of Redlands. They met at the local high school on the mainland and have been married for over 30 years. Like my friend, his mother was an activist for Indigenous sovereignty on Minjerribah for most of her life. Through his grandmother, cultural knowledge and protocols were passed on to mother and son, and now to her granddaughter by way of oral traditions. Both their traditions and protocols are concerned with care for place and its inhabitants – animals, plants, minerals, spirits – and their ecosystems. This oral storytelling knowledge system is what Australian archaeologist, Annie Ross (2019) describes as 'traditional ecological knowledge' (TEK). There is a deep respect– respect that extends to a 'nonlinguistic embodied communication' that connects my companions to this place. As Ross concludes in her paper on TEK, ' It is time for Indigenous and western scientists to work together, to recognise each other's values, for the long-term future of our shared planet'[3] (Ross 2019)

Sitting next to the lake that day – in sweltering heat – watching the dragonflies skim its brown surface, I had no expectation that I would swim in the acidic freshwater for the first time. I had been told by my partner, a lawyer who acted on behalf of our friends in the Quandamooka native title claim, that I should dress appropriately, in a way that was respectful of local protocols. At the time we were newly partnered, both divorced, with eight children, brown and pale-skinned, between us spanning three ethnicities: Anglo, Burmese, and Aboriginal Australian. Not unlike my partner and me, our friends also live between different cultural traditions. And while they had successfully capaigned to have the use of recreational jet-skis and boats banned from Brown Lake out of respect for the place, they nonetheless tolerated people who now come to swim at the lake. They invited me to do so. I was at first reluctant to accept their offer, but then I did.

The water is cool and clean and dark. At the edges it looks rusty. Tiny black tadpoles swim around frantically. As I wade into the water, and swim at their behest towards the middle of the lake, there is only darkness beneath me and a great sense of fear at what may lie under my feet. Boumiera has a male complement Kaboora. According to Quandamooka cosmologies of place, there is a snake spirit that moves between Boumiera and Kaboora (Brown and Blue), whose resting place is the center of the lake I am swimming towards. I am alone in the water. I think of the stinking goo beneath my feet, of the snake spirit and the fact that no one has 'sung out' to the lake before I entered. My

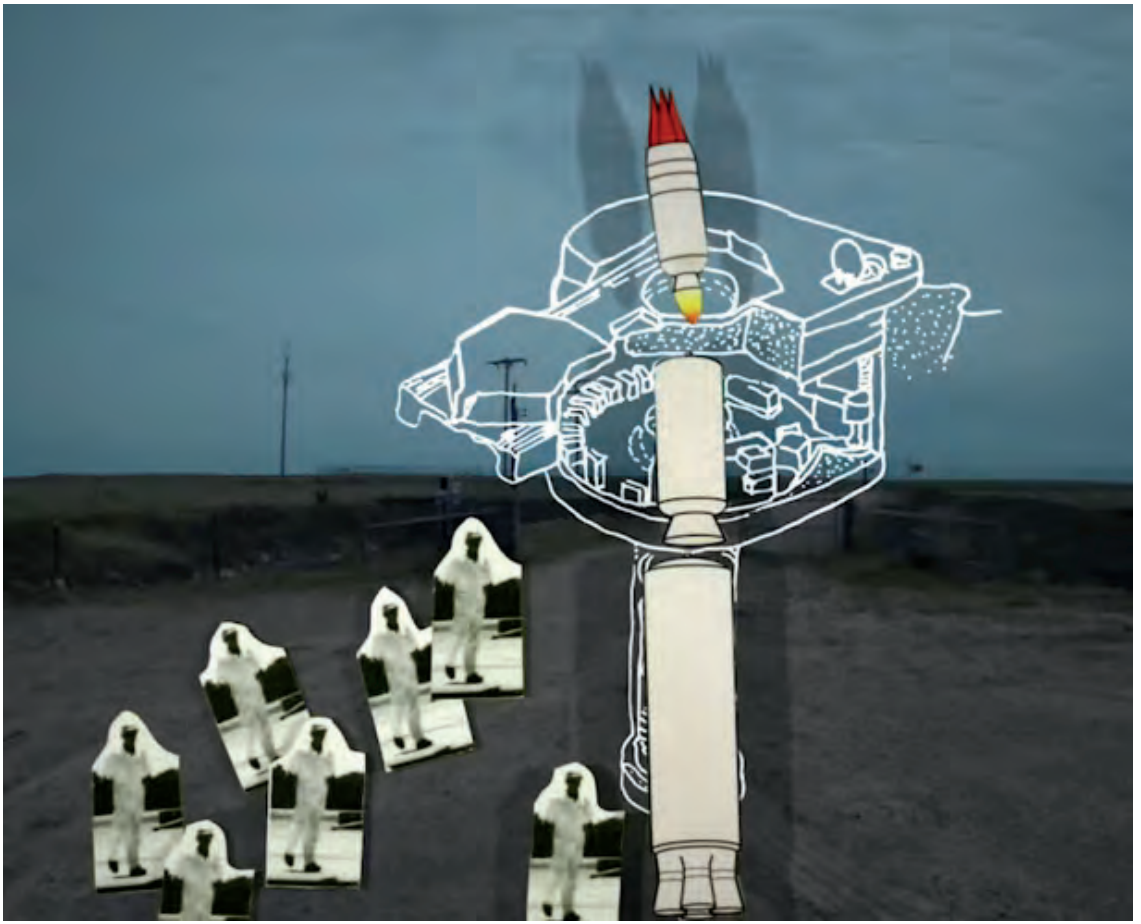
3 Annie Ross, "Traditional Ecological Knowledge: Indigenous Science, Archaeology and 'Truth," National Park Service website, posted June 27, 2019.

friends don't swim, and my partner only dips his toes. They insist that I go further. Their permission doesn't make me feel less awkward about finding myself in the middle of a women's lake being watched by surrounding paperbarks and passed over by a damselfly, a Dune Ringtail, whose species is unique to this lake (Barram 2017).

My head goes under, I see only brown, feel layers of sensation, warm water around my shoulders, cold water at my feet, negative space beneath that. I swim towards the reeds on the other side of the lake, increasingly certain that the lake is the one in control of this situation. My breath loses its rhythm, panicked by some unknown force – mine, or that of the brown water? I stop, turn around, and make for the soft sandy shoreline where the other three humans laugh and joke at the fact of my having been 'spooked'. In truth I am not spooked, but rather, humbled by the lake and its non- human inhabitants. I recognize that the lake and I are inextricably connected, though I feel as though I am a guest extending myself to understand its protocols. A growing respecere for this ever-changing place pervades my mind and body, visceral rather than intellectual, my mortality in synch with the goosebumps on my skin as I look back at the lake and acknowledge its being-ness. I think of Haraway's (2008) comment: 'Wounds to self-certainty are necessary if not yet sufficient' (p. 12). I understand the value of this wound. It is a gift – from my friends and from the lake.

Complexity is the name of the game. I recognize the nature of the hybrid space I am standing in. Brown *is* the colour of intimate and uncomfortable contact between my human body and the nonhuman world. This first visit to Brown Lake casts spells on me – a colour spell and a naming spell. Troubling and enlivening a new language of seeing and understanding, it changes my relationship to Brown Lake. Knowing the lake's indigenous name, Boumiera – the rituals applied to it, the responsibilities of those who frequented it – extends the muddied histories of the human, while the non-human reveals further stratigraphies of place. This hybrid, entangled place of thinking 'brown' forces me to blend myself *within*, rather than consider myself separate *from*, my pale skin off-kilter and my certain sort of humanness off-centre, reoriented, realigned. Light shimmies through the water as if the lake is laughing at me. Environmental philosopher Deborah Bird Rose (2017) suggested that seeing nature in an active voicecomes with a burden: the commitment to bear witness to the shimmering lively powerful interactive worlds that ride the waves of ancestral power. This commitment calls to engage in forms of scholarship that encourage 'passionate immersion' in the lives of both humans and nonhumans. (p.53)

On that first visit to Brown Lake, I bore witness to a something I still don't fully understand. What I did glimpse, though, is that 'we do not know what brown is, but we are in it' (Mentz 2013, p.210).



Sarah Kanouse, *Grassland* (still), 2019, digital video with color/sound, 19:20 mins/secs (Sound design/mix: Jacob Ross)

Meridel Rubenstein, *Pyroclastic Dance (Mt. Merapi and Mt. Bromo Volcanos, East Java Indonesia),* 2010–12, 2023, dye-sublimation photographic print on prepared aluminum, 56 × 50 inches

Anne Yoncha, *Peat Quilt*, 2021, created in collaboration with composer Daniel Townsend (University of Florida), 6 × 8 feet

Nitin Mukul, *Heat Maps (Winter Solstice 2021)* (still), clay collected from the Chesapeake Bay in Maryland, charred wood from a fire in NYC, acrylic inks and paint, silicone oil, filmed on 12/21/21 in Queens, New York; environmental sound recorded in Hyderabad, India, 12/21/21, by @kdeduljimusic, 10 mins

Scott Sutton, *Rio Grande Basin Watershed*, 2022, indigo pigment from dye garden & egg tempera, 8 × 5 feet

Cruising the Monuments of the Outskirts of Las Vegas

Emily Budd

*After Robert Smithson's A Tour of the Monuments of Passaic, New Jersey *Use of Smithson's original writing used as cairns along the path of my essay are denoted in italics and mostly featured in their original order as written in A Tour of the Monuments of Passaic, New Jersey for Artforum in 1967.

"I am convinced that the future is lost somewhere in the dumps of the non-historical past…"
—Robert Smithson, A Tour of the Monuments of Passaic, New Jersey

"The lowly are not at the bottom of the heap. Our radical imagination digs into the soil… It is underground, from the rich organic life downwards to forgotten treasure, layers of a thousand lives, coal, fuel, mineral resources, archaeological treasure, the rich life of the earth."
—Hamja Ahsan, Shy Radicals

On a Sunday in late July, I awake at 5am so Amy and I can have coffee together before we cruise monuments. It will reach 108F today, not the hottest it has been lately in the Mojave's summer heat. Comfortably doing things outside happens earlier in these stretched days, and thus the desert sun determines our daily rituals.

In the second paragraph of his famous essay, *A Tour of the Monuments of Passaic, New Jersey*, Robert Smithson rides the bus from New York City while reading the *Times*. I use this time to reflect on my intentions for today's cruise. Smithson's essay is my conceptual map, and my permission to cruise for unrecognized possibilities among worlds discarded by the apocalyptic implications of entropy. At a local lecture on her book, *The Spiral Jetty Encyclo*, land art scholar Hikmet Sidney Loe discusses Smithson's interest in reclamation projects like dams, mines, and other human interruptions structured to extract the material benefits of a geologic earth. In sketches he left behind, these hopeful land art works are monumental growths at the edges of destruction. In the Mojave of the present our struggling reservoirs, disappearing dry lake beds, expanding power lines and violent solar farms describe a desert region in the midst of colonial disturbance and climate change. I explore these disturbed sites through the lens of their potential renewal, seeking geologic-scale queerness among these ruins of power and extraction on the local landscape. When artists at Pace Gallery gather for *Cruising Utopia: A Conversation on Peter Hujar*: "cruising culture is only over if we choose to see it that way" (Nayland Blake). It's not just queer history, it is also a queer future, perhaps a "utopianism that counters the dead-end temporality of straight time" (Jose Esteban Muñoz). Cruising is seeking queer pleasure, historically on the outskirts. But it is also seeking a queer future, and represents the growth of a community that can occupy spaces to create change. We walk and question and experiment to remember the future. Today our cruising is a curious wander, an escape from reality, "leaving the here and now of straight time for a then and there that might be queer futurity" (Muñoz). We are floating between mythologized ruins on an invisible sea change, seeking our *big events of history*, and a form of hope that is queer renewal.

I finish *Shy Radicals*, outlining a quiet underground and its utopian revolution through the "anti-systemic politics of the militant introvert." The sky over Las Vegas this morning glows of lingering electric light intent on its own promotion, while the sky of *Shy Radicals* is free of artificial noise, light, and machines, repopulated with birds, stars and insect symphonies. The ground under our feet teems with possible energies that will eventually rise to the surface and have their moment in time. We head out from our apartment in Paradise.

At the intersection of Serene Avenue and Bermuda Road is a bright spillway monument that connects the Lower Duck Creek Detention Basin and the Duck Creek Channel. Photographing it with my iPhone is like documenting a sundial's performance. The ascending walls lead to a depression the size of a suburban block in the morning sun. Shadow fingers drag along the ground, sleepily retreating from the lengths of the sun-bleached concrete expanse. Grand, tapered hallways ending in doorways lead to a non-present lake that is channeled by potential inflows.

We cross the Serene-Bermuda triangle that overpasses the Duck Creek Channel, carrying *a continuous blank* on its winding path away from the basin. The Las Vegas Wash has been reconstructed into a system of concretized channels that slip between neighborhoods all over the city. They harness a massive, unseen flow. Recent monsoon rains prove their necessity- in the desert even a short storm can be very damaging to a city that does not consult the flows of nature in its planning. The compositions of my snapshots are vast spaces, empty of water but full of sunlight. This site of potentiality is empty and waiting, while controlling the waters that could rush into the valley at any geological moment. Directional meaning seems as from *an outmoded world*, here both "inflow" and "outflow" enjoy gravitational and catastrophic equity but today they both rest.

Walking around the basin's perimeter, we find smaller monuments made of riprap and gravel piles. A labyrinth of fencing casts oblique, woven shadows and gathers bundles of tumbleweeds and plastic bags compressed between windflow and chain links. Evidence of a large landscaping project bordering the basin include piles of polyvinyl chloride piping for irrigation. They await burial to water the request of Bid No. 605526-19 of Clark County, Nevada: "Trees include Honey Mesquite, Shoestring Acacia, and Southern Live Oak. Cacti and drought tolerant plants include Joshua Trees, Weeping Yuccas, Red Yuccas, and Prickly Pear cacti. Ground cover includes Trailing Lantana and Baja Fairy Duster," earthworks in the making. Since it is the weekend, a yellow machine (Cat 140 Motor Grader) made to move earth is not moving earth. The surrounding suburban neighborhoods are dense and distant, contrasting the all-consuming emptiness of the basin before us. Starting our cruise here suggests a huge invisible force, and we are catching its current into an unknown action of time.

Emily Budd, *The Atlantis of Lake Mead, St. Thomas, Nevada*, 2022, iPhone photograph

Following the course of this flow, we drive past the abrupt edges of the suburbs on a highway out of Las Vegas. Soon we are passing countless monuments crossing through the Mojave valleys- they are infinite power lines of lattice towers sweeping past us. They fan open like paper dolls as we pass, and shrink to hazy miniatures in the distance. Tied together by conductive aluminum wiring, the endless structural buttes reach into every direction and distant horizon.

We turn onto a rocky road to follow one of these lines of power, to the base of a lattice tower at the brink of a mountain pass. Standing next to one of these steel beasts feels like an encounter with a spaceship or a terrific mechanical alien. Though it appears empty it swells with an invisible mass of audible energy that feels dangerous. I cautiously wind around creosote, cholla and the sporadic barrel cactus, trying to listen for rattlesnakes but the air is too thick with the ominous sound of high-voltage buzzing. The linked towers are a hive mind that seem to gut some internal power from the earth and exploit its primal hum. This system of crass extractive means carries power from water, wind, solar- a swarming channel of energy mapped upon the landscape.

Cruising back down the mountain road, we pause as a desert tortoise crosses into a dry wash full of creosote. I clamber into the bed of the truck to look across the valley, seeing a dry lake bed and a great shining "lake" beyond it. Actually, the lake is no lake, but a mirage from thousands of glass panels celestially illuminated, radiating light into a false liquidity. *One after another, they extend* into a single surface of sunny crystallization. The dry lake bed has a parched yellow brightness at the base of the mountains. Tire ruts pause in a series of cracked saw-tooth waves as the evaporation rate exceeds the inflow. The impressive Solar Lake Monument glistens beyond.

As we cruise past the lake, a reality of precisely-planted rows create fleeting triangles in all directions, morphing into an Escher-like illusion towards infinity. Up close the solar farm is like a monoculture crop or industrialized orchard. Beyond this lake, another solar lake is under construction. Rows of new structures await their glass panels, tenuous and naked but linked like vineyards in winter. Large boxes of material are placed along these structures. They extend into the distance mathematically as they attempt to diminish on the horizon, but are blocked by the mountains that oppose more expansion. Limitless growth is a self-destructive illusion- nature has so many mountains. Smithson's words echo in my mind's ear:

> That zero panorama seemed to contain ruins in reverse, that is—all the new construction that would eventually be built. This is the opposite of the "romantic ruin" because the buildings don't fall into ruin after they are built but rather rise as ruins before they are built.

Arcing with the sun, this crop of sunlight panels synchronize their movement, filtering sunlight like photosynthesizing plants to make energy, but these do not breathe in the process. The solar lake and the construction of a new one, the solar panel structures in progress, and the automatic mechanical vineyards borne not of fruit or roots, have no *big events of history* exhaling into the future. This new life doesn't come from generations of seeds or *a rational past*, it is unpacked from a cardboard box.

The Mojave is mercilessly reclaimed, dammed, mined, pipelined, and energy-farmed to what seems like the edge but then gives more. Joshua trees and desert tortoises are relocated while their lands are razed to make way for these structures, leased by the Bureau of Land Management, "our public lands" put to work. This solar lake currently under construction may last about 20 years or so, then renew or retreat.

We wander along this ancient playa amidst all these ruins in reverse and energy flows that fly past us that I can't quite visualize. I feel disoriented reaching a sign that warns: "Danger, Do Not Enter, Hazardous Voltage…" From the center of this sunlight field, in a Valley of Power where endless currents pass from and through, I wonder if our cruise can only move towards an *abandoned set of futures*. We drive away from this power source, towards another, powerless lesbians of the lost future.

Smithson: Next I descended…into a false future?

Next we descend into the depths of an abandoned future. That is, the un-sunken landscape surrounding the receding Lake Mead reservoir. A water crisis looms ahead of us. From afar, the mineralized ring circling the oasis is a pale ghost of the previous lake. To cruise these lands is to move amongst a kind of auto-archaeology of young ruins. The underwater past is evidenced by infinite bivalve shells fossilizing the ground, ghosts demonstrating a landscape once submerged. The great Bathtub Ring monument reaches high above our cruising altitude as we journey deeper into the depths of reemerged earth.

St. Thomas isn't a normal ghost town, more like a zombie town undrowned- its holes are vacuous. It exists in an unforgiving cycle of sinking, reappearing several times since the building of the Hoover Dam. The afternoon sun clarifies the foundations of missing buildings and a few lonely walls scattered about the valley, remaining as monuments of loss. We are far away from any visible sight of the lake, despite the town being under 60 feet of water in its recent *nonhistorical past*. One utopia is always sacrificed for the next, taking with it the short-term dreams that linger around the edges of the fluid present. A pair of ravens inspect us, guarding their ghosts. They oversee the edges of the unknown future.

Is St. Thomas the Atlantis of Lake Mead? Its desolated valley is like an upside down island, on the other side of the mirror that is the water's absent surface. An "Anti-lantis" maybe, moving in the opposite direction- rising from the depths, not falling into them. The ruins of this town feel eternal, where we can cruise the possible futures of queer renewal. This kind of renewal isn't

invasive or even visible, but it inspires dreams of desirable change that opens up failed futures.

Queer renewal seeks the coming out of multifaceted possibilities without judgment (Atlantis)- we will not sink into the shame of our ancestors or the *impossible progression* of straight-time that assures its reproduction. "Where shame makes us freeze and try to get really small and invisible, pleasure invites us to move, to open, to grow" (Adrienne Marie Brown) and welcome the reanimating, life-giving power of the desert. Queer renewal defies the *failed immortality* of discarded things, by rising to that discard with the bones or shell of a body seeking flesh, muscles, salt, shelter.

The *Monuments of Passaic* are everywhere, old and new, and in all these sites lie an opportunity for queer renewal. Through queer renewal, ruins release from their *lower state of futurity* into one of higher potential. This release seeks to locate the transformative possibility of deep change through queer futurity. What comes into spaces after the abandoned future? Queer renewal is finding our own monuments and calling them Queer- freeing them from the path of straight, time or otherwise. These monuments could be abandoned towns, young ruins, empty nests, dry aqueducts, vineyards in winter, or the gathering of a group of souls anywhere in the *celestial playground* who want to imagine the future, and remember the past. To seek guidance from the land and our ancestors, we cruise the temptations of renewal by tracing the memory-steps from the alleys of New York or the streets of Passaic, on these abandoned stepping stones into a lost building on the outskirts of Las Vegas.

The last monument is a decaying hotel and boat ramp stranded in the desert. The ruins here have a less "Historical" designation, abandoned on the other side of submergence. This lakeside destination of the not-so-distant past is now far from the water's edge, a desert-anomaly of maritime architecture with an extended boat ramp ending far from any shoreline of the present. The Young Ruins of Echo Bay are an example of how quickly time and nature can prove their point, even to the human time scale. Overgrown landscaping is both enlarged and dead-looking. Palm fronds, tumbleweeds, rotted-apart sections of plywood and other pieces of the building slowly release from their placements, covering the ground as desert life creeps back in. A kind of land madness casts a spell of renewal here, of interspecies mingling, cross-pollinating, overlapping, mixing, remaking. It quietly retreats from the edge of the lake, abandoning the function for which it was originally built and served.

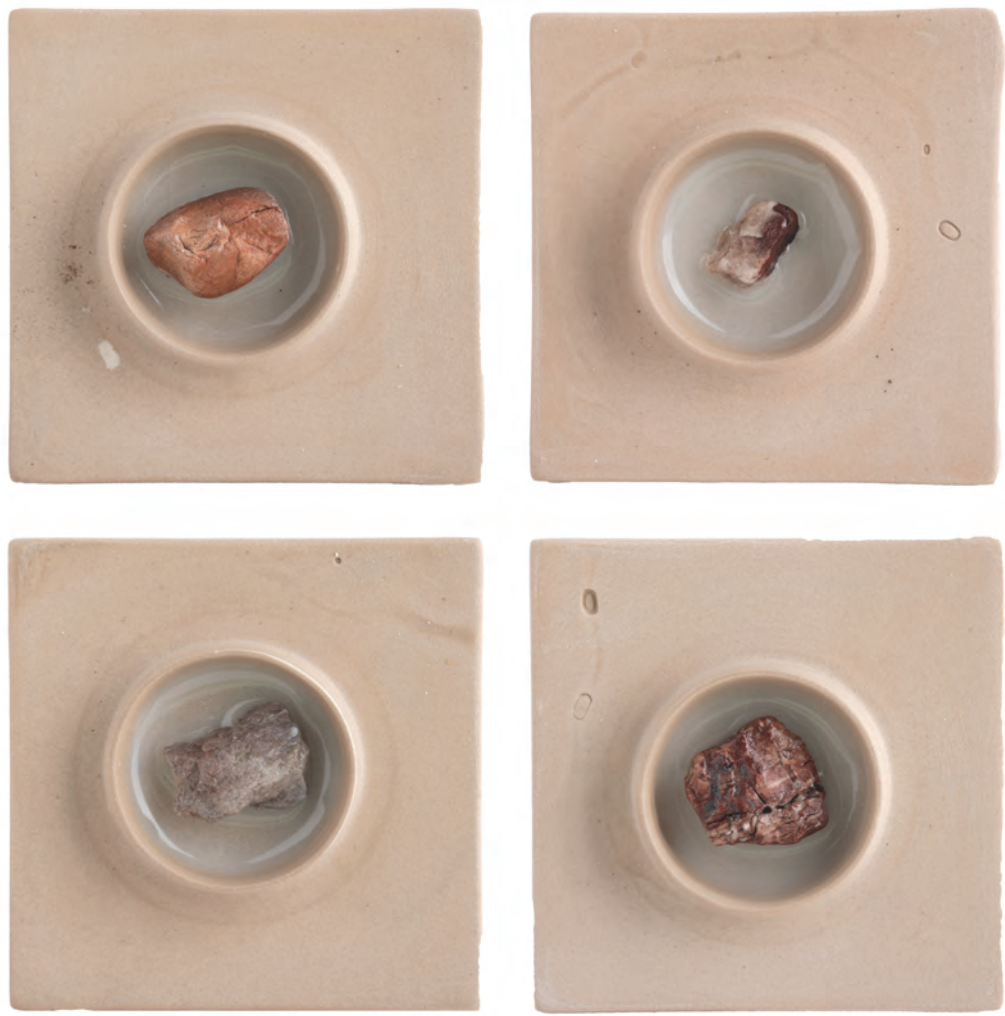
When thinking about it further, it had me questioning whether the shoreline had sunk away from the hotel, or if it was perhaps the hotel that had risen away from the lake, and in so doing abandoned itself. In this abandon it rises into its own ruin. Not a decline but an ascending ruin, not falling but rising, moving far above and beyond

the water's edge. Can we abandon ourselves, slink back from the edge of the functions of productivity, which by their very nature use up, consume, obsolesce... to an entropic path less sought after, but which leads to the opportunity for renewal?

The echoes of this diminished bay no longer resonate, the ruins of its abandoned spaces lie open to precarity, reinterpretation, and renewal that pass and cross through, a site of multispecies and multimatter collaborations, interactions, overlappings, rearrangements, all the disorderly things inherent in achieving real change. This rise into ruin is a desire *for* ruin- to achieve a change that means messiness, imperfection, openness, and being receptive to new futures. But this rise is also the forgotten ancestral roots growing back through the cracks of an abandoned building, long underground, now rising to intermingle with the disused implants. Rising into ruin involves toppling monuments and abandoning legacies, or the relics of an imposed past we want to abandon, to make room for building intentional futures we won't abandon. This ruin creates the spaces needed for those future communities that will come after us.

Time is no longer linear, we don't have to see it that way. To call a path to chaos and destruction *entropy* is the privilege of being from an untangled place in time. Those linear places use precious energy, resources and inequitable social systems to keep them untangled. But entropy is an emergent force embedded in a whole due to the sum of its parts. I wish to welcome ruin that opens up space for queer futures, an embedded force that we don't see everyday but over time may be enormous. "...it takes 2 to fuck and it takes 2 to fuck things up" (June Jordan). The hour is late, time to continue our rise into ruin. The *false immortality* of the reservoir will haunt us, but the super blooms are waiting.

Queer renewal includes queer returning: returning the lands back to The Nuwuvi before the forces of settler colonialism and reclamation ruin them further. I acknowledge that all the lands we cruise are stolen.



Ashley Diane Saldana , *Language of the Earth: 030523*, 2023, ball clay (OM4), kaolin, minspar 200, silica, darvan, nepheline syenite, frit 3124, wollastonite, collected rocks and minerals, 14 × 6.5 × 1.5 inches

Julianne Clark, *Layers*, 2020, collaged archival inkjet print, 16 × 20 inches

← Annette Nykiel, *Dendritic Rhizomes*, 2023, plant pigmented handmade felt cords, collected rocks, on a dining room table, digital photograph of ephemeral installation, 48 × 48 inches
↘ Cheryl Leonard, *Last Flight of the Adélies*, 2014, Adélie penguin vertebrae, dried bullwhip kelp, and driftwood, 11 × 7 × 7.5 inches; *Ablation Zone*, 2022, audio, 5:13 mins/secs

Luciana Abait, *On the Verge #4*, 2022, archival pigment print, edition of 5, 15 × 20.5 inches

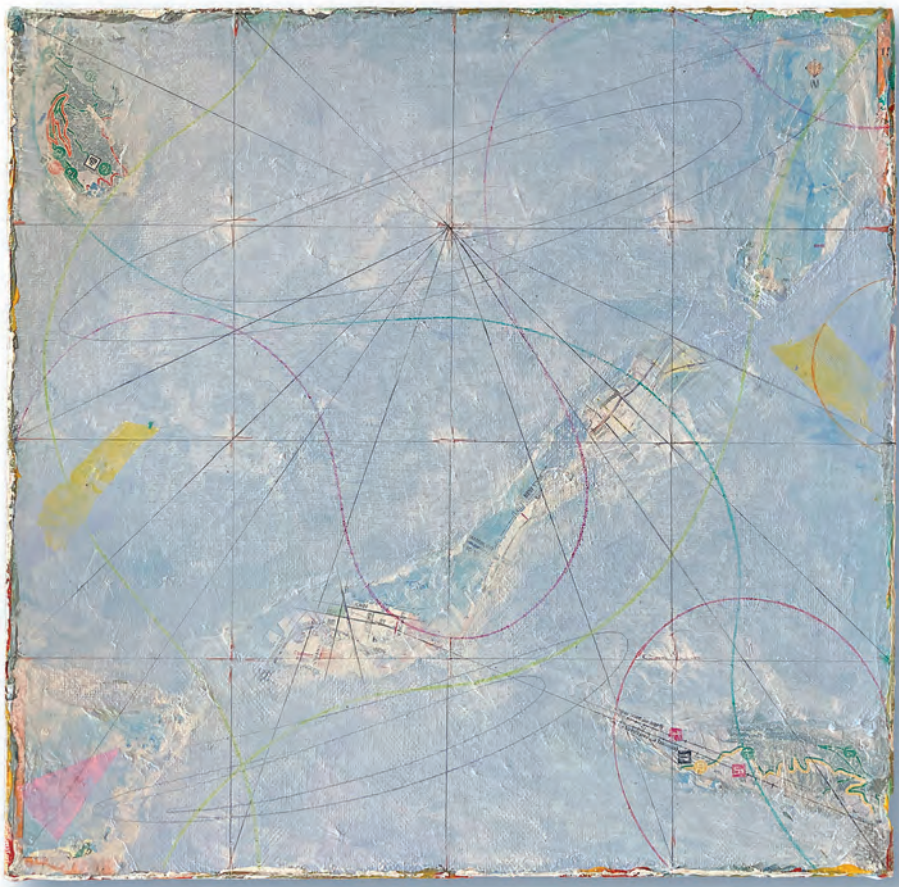
Mia Mulvey, The Mobility of Geology: *Valley of Fires, NM*, 2023, digital photograph, documentation of sculptural action in landscape, 15 × 25 inches

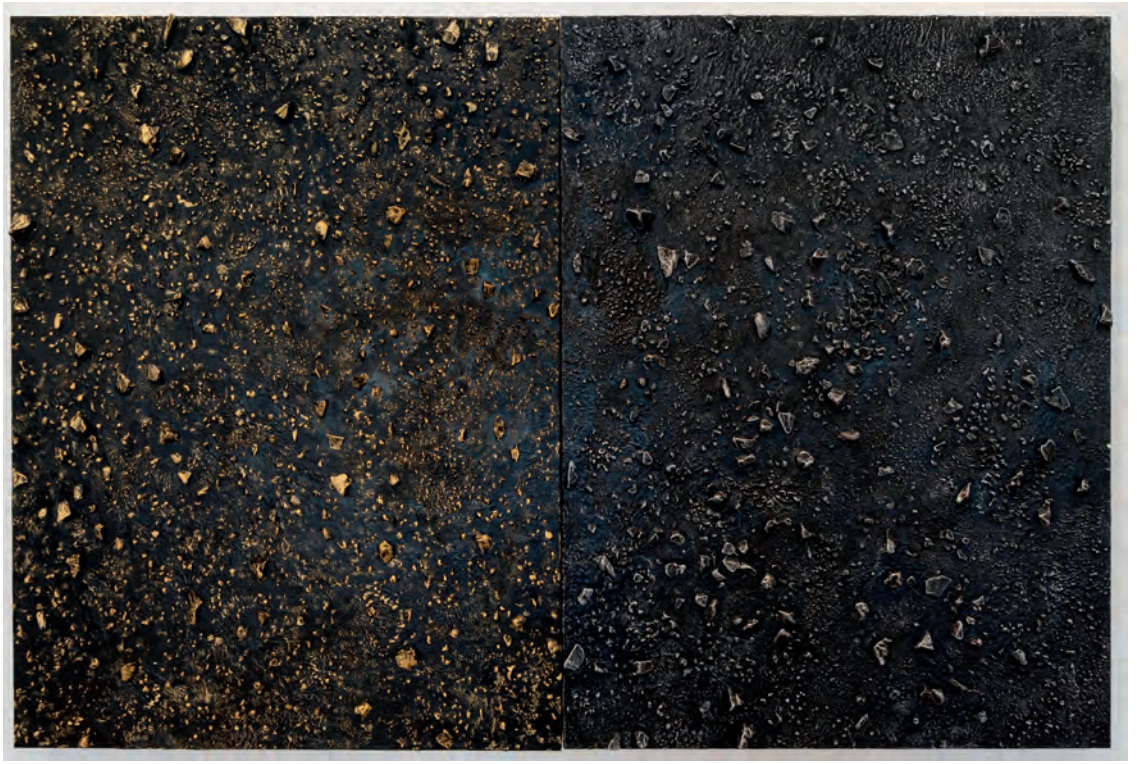
Roberta Trentin, *EXTRACTOCENE*, 2022, mycelium grown on hemp hurds, each letter is 2×1.5×0.6 feet, in-situ 23 feet wide

EXTRACTOCENE

EXTRACTOCENE

Linda-Marlena Ross, *Rising Waters, The New Cartography: Drifting Stations 2*, 2022, acrylic paint, paper, old maps, tissue paper, coloured pencil on canvas, 12×12 inches

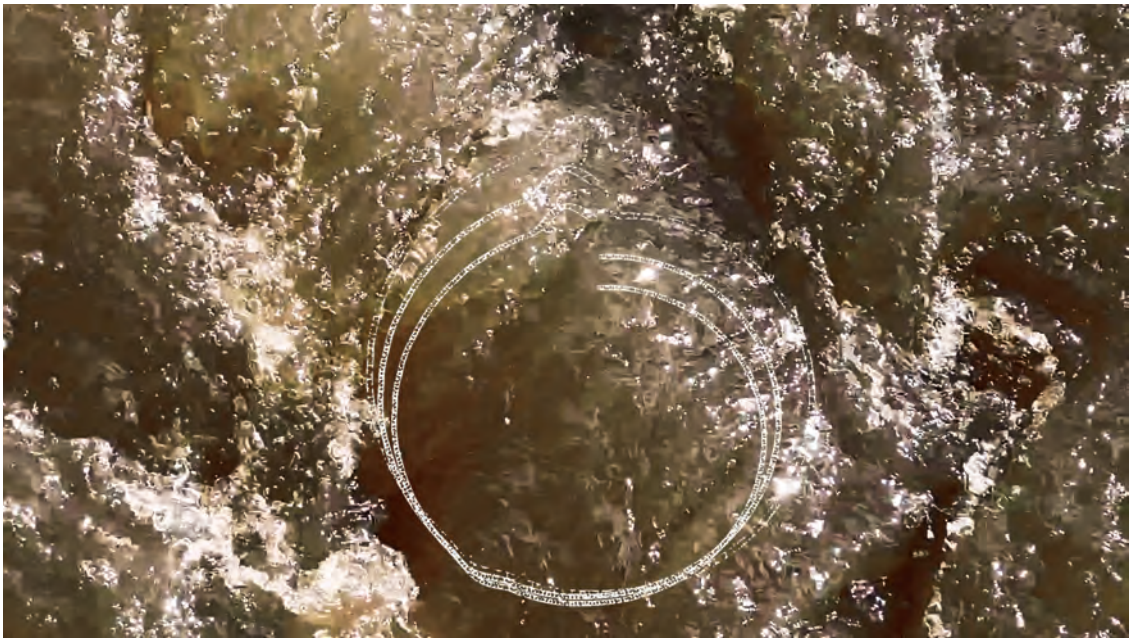




↑ Sara Mast, *From The Fire From The Sun*, 2022, encaustic & PEM glass from waste, 40 × 60 inches
↗ Erin Wiersma, *Transect*, 2021, charcoal on paper, 84 × 52 inches

Nikki Lindt, *Underground Sound: Human Engagement* (still), 2022, recording in soil next to trail, H264 video with subterranean acoustics

Anne-Katrin Spiess, *Great Toxic Lake* (still), 2022, digital video, 2:36 mins/secs



Kim V. Goldsmith, *Wambuul bila* (still), 2023, soundscape and animated HD video, 15 mins

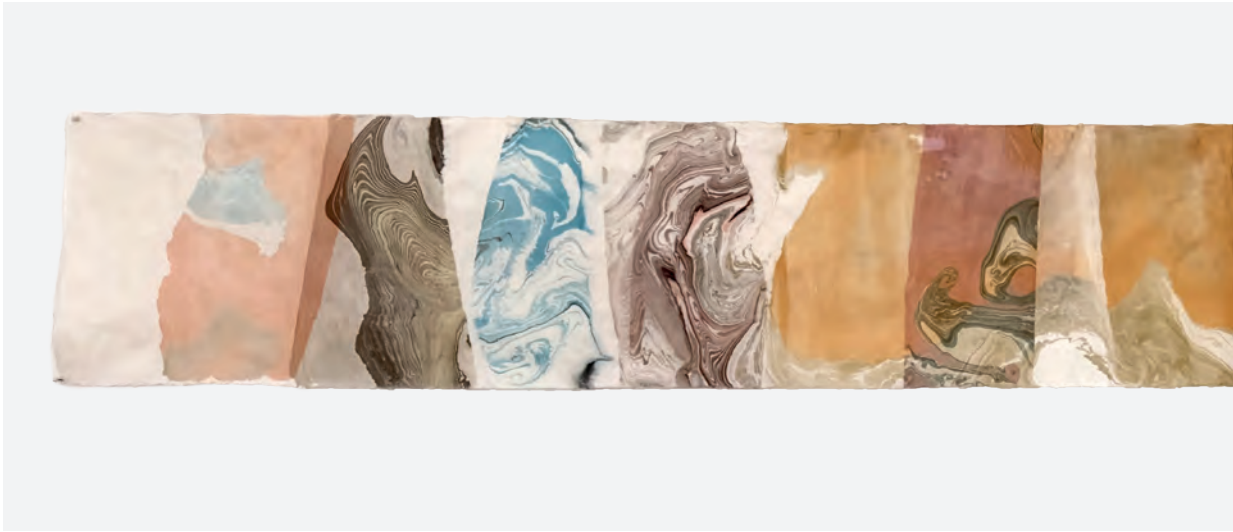
Arminée Chahbazian, *Stone Tablets*, 2016, found stones inlaid into carved marble, 12 elements — *Window's Edge, Weighted Drop, Tipping Point, Radiant Whole, Percussive Stillness, Fragile Embrace, Fading Moment, Expectant Sound, Empty Beats, Emergent Thought, Critical Link, Bent Horizon*, floor installation, 52 × 38 × 2 inches

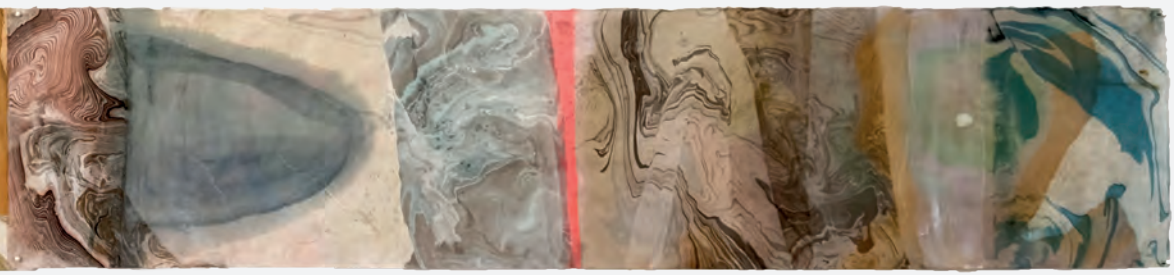
Harriet Hellman, *Deep Time II*, 2021, stoneware porcelain, 18 × 11 × 9 inches

Marguerite Perret, *Transmutation Shipwreck: Edge of Life Vest (littoral zone)*, 2020, vintage life vest in cast porcelain, photographic images and graphics on study tables, three-dimensional wall pieces, diorama format, 30 × 30 inches

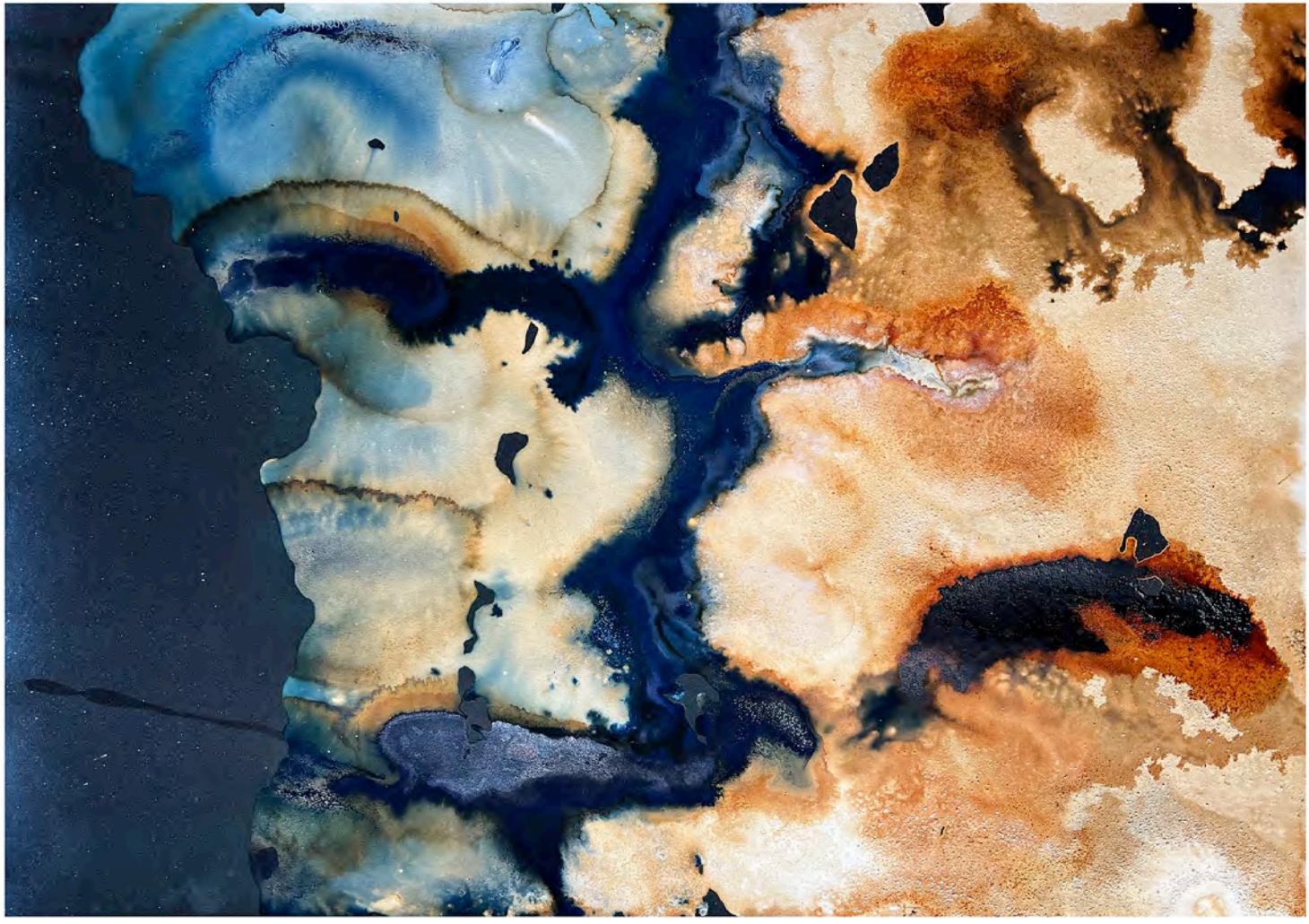
Regina Bos, T*ransmission*, 2023, sculpted expanding foam, beeswax, damar resin, handmade walnut ink, acrylic paint, oil pigment sticks, casing and vintage pinball machine parts, 30 × 26 × 14 inches

Bonnie Levinthal, *Strata* (detail), 2022, ink and watercolor on Japanese washi, 8 × 72 inches

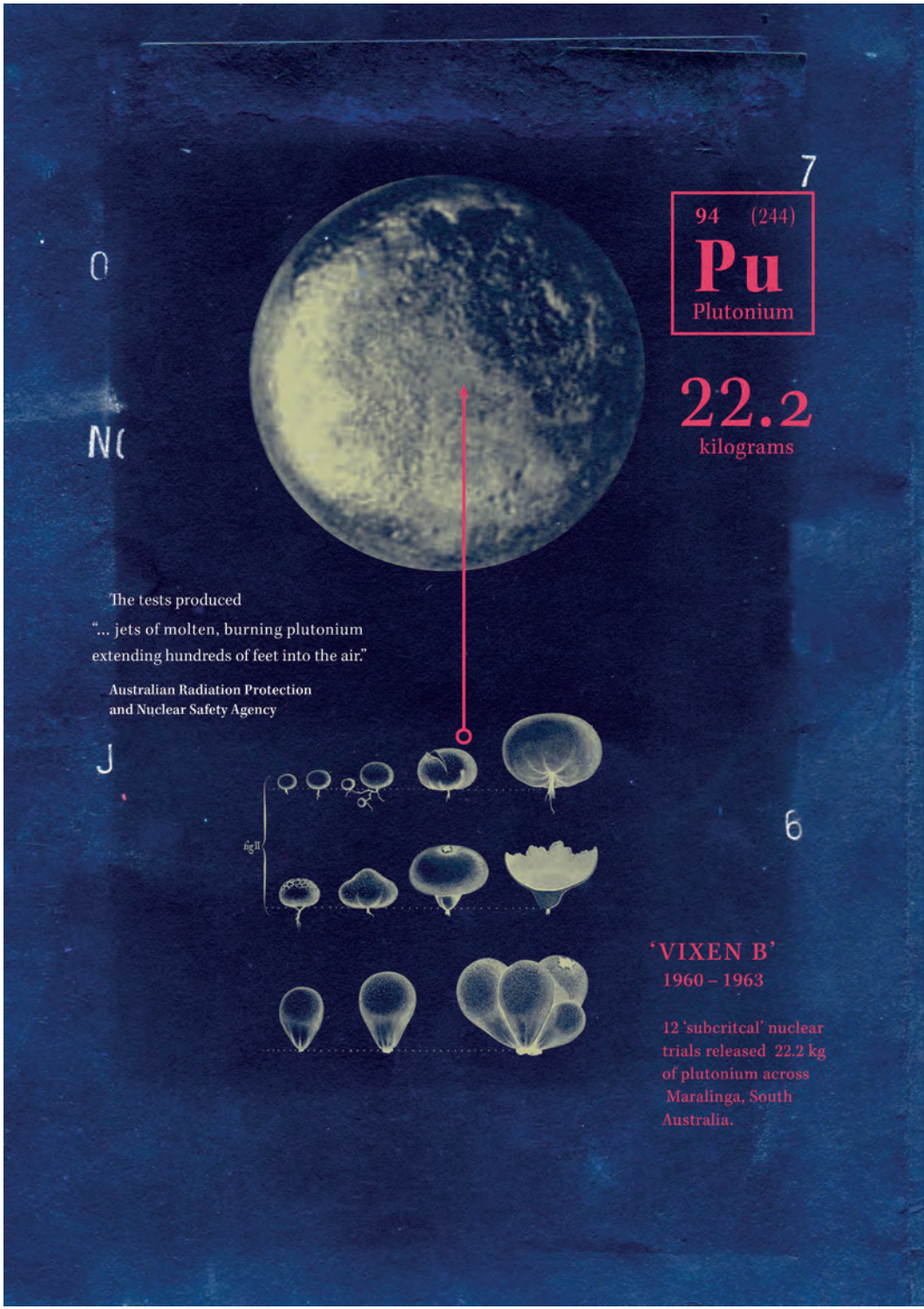


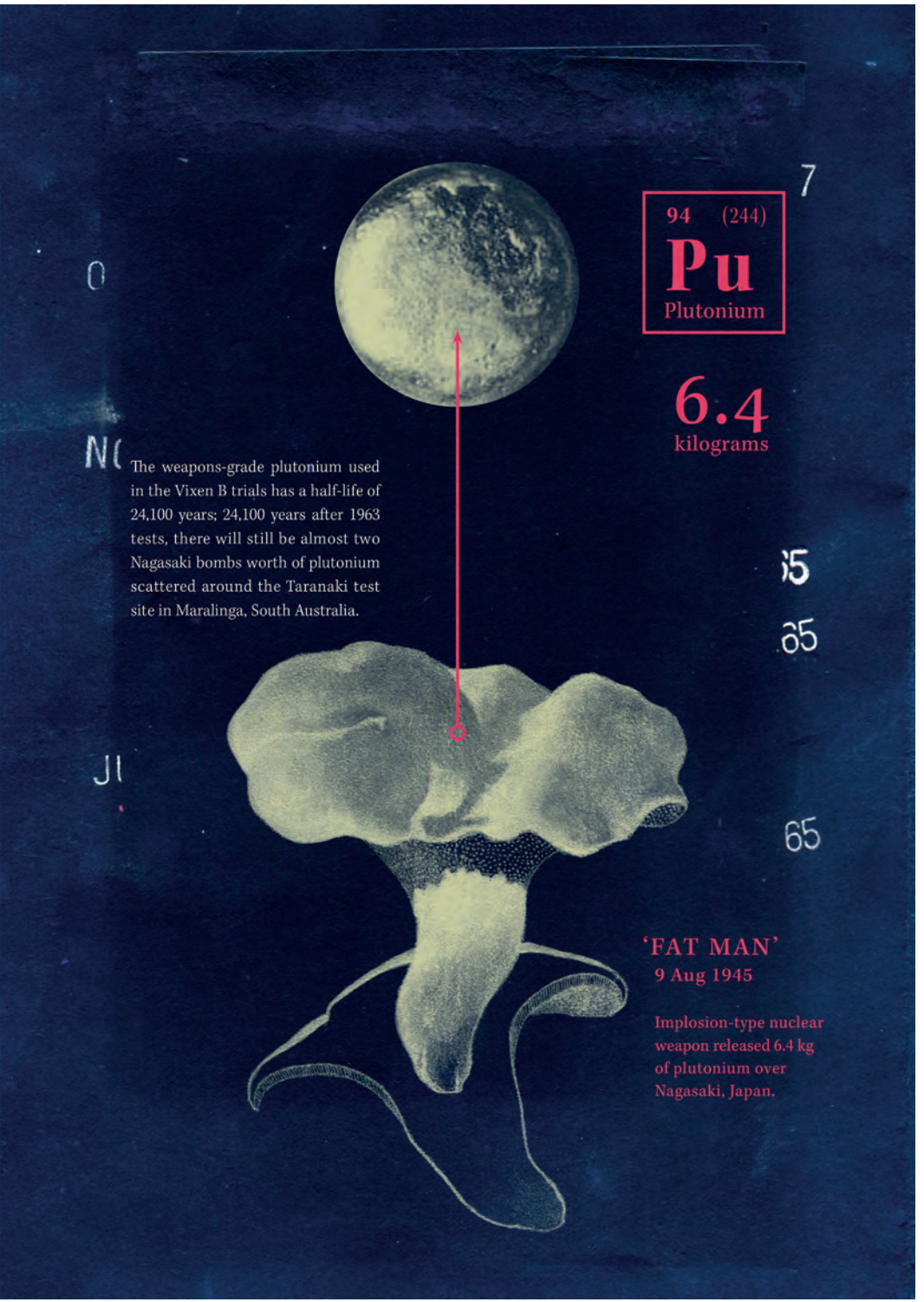


Aindreas Scholz , *And So I Watch You From Afar*, 2023, cyanotype diptych, UV light, iron salts, seawater, silt, wind, rain, 33 × 47 inches



Rainey Straus, *Dwelling*, 2022, acrylic on Yupo, 5 × 10.5 feet


94 (244)
Pu
Plutonium
22.2
kilograms
The tests produced
"... jets of molten, burning plutonium
extending hundreds of feet into the air."
Australian Radiation Protection
and Nuclear Safety Agency
'VIXEN B'
1960 – 1963
12 'subcritcal' nuclear
trials released 22.2 kg
of plutonium across
Maralinga, South
Australia.


94 (244)
Pu
Plutonium
6.4
kilograms
The weapons-grade plutonium used in the Vixen B trials has a half-life of 24,100 years; 24,100 years after 1963 tests, there will still be almost two Nagasaki bombs worth of plutonium scattered around the Taranaki test site in Maralinga, South Australia.
'FAT MAN'
9 Aug 1945
Implosion-type nuclear weapon released 6.4 kg of plutonium over Nagasaki, Japan.

Zoë Sadokierski, *Perpetual Table of Elements: Plutonium*, 2023, digital collage, ultrachrome inkjet print on archival paper, 16.5 × 23.5 inches

Reimagining the aesthetics of dead wood in the anthropocene

Robert Haskell

How do aesthetics shape the landscapes we inhabit? We can see the effects of the waste we create and the resources we extract scarring the planet, but what about the things that we don't see? What about the elements of nature that have been systematically destroyed because of widely held opinions that they are ugly? While aesthetic attitudes can shape our landscape in many ways, I believe that removal of rotting dead wood in particular is causing ecological damage that will reverberate through the eons if left unchecked. Dead wood is reflexively removed and destroyed all over the world for aesthetic reasons, with safety concerns and misconceptions often providing post-hoc rationales. Fortunately, damage that is done in the name of aesthetics can be fought using the tools of ecological art. I propose using sculpture to protect dead wood in-situ, while also educating the public about its central role in the ecosystem. Aesthetic conceptions around dead wood can be directly influenced by highlighting the inherent beauty of dead trees, both visually and conceptually.

Dead wood has been present in the landscape for approximately 370 million years, since the first ancient forests of giant club-mosses, horsetails, and tree ferns lived and died in the Carboniferous period. Because of the indigestible lignin, cellulose, and defensive chemicals produced by Earth's early trees, dead wood piled up for millions of years with no effective decomposers to digest it. This allowed the wood to fossilized in place, creating the geological strata that gives us coal. Hundreds of millions of years later this geological layer provided humans with the power source that kickstarted the Industrial Revolution, effectively unleashing the forces that would create a new geological epoch on the planet.

But by the late Carboniferous and early Permian periods, fungi, bacteria, and other microbes had developed a suit of enzymes to break down the lignin and cellulose in dead wood, unlocking a vast reserve of nutrients that could now flow back into the food web. While wood is relatively nutrient poor compared to other plant tissues, the sheer quantity of dead wood available means that it is one of the richest resource pools on the planet, even to this day. Once the nutrients in the dead wood had been unlocked by these enzymes, a unique ecosystem of creatures called *saproxylic organisms* started evolving to specialize on this new resource.

It is thought that the first beetles evolved to specialize on dead wood. The outer wings in ancestral beetles evolved into hard coverings called elytra that allow beetles to safely burrow through decaying wood without damaging their fragile inner wings, and their larvae developed incredibly strong chewing mouthparts allowing them to burrow into dead trees. Other insects and arthropods followed suit, including members of all the major insect groups. Some insects have developed their own chemical mechanisms to break down and digest dead wood directly, but most either feed on wood-decaying fungus or rely on it to

break down the wood into digestible compounds. Today it is estimated that ⅓ of all forest insects are saproxylic, rivaling the quantity of herbivorous and soil dwelling insects. The saproxylic food web includes vertebrates that feed on fungi and insects, with woodpeckers being the apex predator in most regions. Another large group of creatures who depend on dead wood are cavity-nesting animals like birds and bats. Nearly 20% of bird species worldwide have evolved to nest in hollow tree cavities, and human-caused destruction of standing dead trees (called *snags*) have already caused extinctions and broad population declines in these communities. And beyond these creatures that strictly require dead wood for their survival, many more utilize dead wood opportunistically, either feeding on saproxylic organisms, or sheltering under logs and in tree cavities. When dead wood is removed, the entire ecosystem suffers, not just the creatures directly dependent on it.

The saproxylic ecosystem is as large and diverse as it is mysterious and understudied. We should care about dead wood because of the indispensable role it plays in cycling nutrients back to the soil for forest health, but we should also understand that it is the linchpin of an entire food web and ecosystem entirely distinct from the vegetation-based food webs we are more familiar with. Not only are saproxylic organisms experiencing the same kinds of habitat loss as other creatures worldwide, but they are also facing unique threats, and an almost complete lack of awareness from the public. The fact that saproxylic organisms are so understudied and poorly understood works against their conservation in the sense that we are not able to detect declines or extinctions in if we don't know that they exist.

Although agriculture and forestry represent serious threats to the conservation of dead wood, the challenges stemming from aesthetic attitudes and cultural values are only increasing in severity as more and more land is developed and urbanized. Fortunately, large institutions like forestry companies and government agencies are increasingly aware of the importance of dead wood and are changing policies and practices accordingly. Much more needs to be done, but the problem of dead wood loss has been largely acknowledged by the major players in forestry and government. Unfortunately, private landowners and the general public have not been kept up to date with the latest research on dead wood in the same way. This has led to the an accelerating destruction of this vital resource by individuals as development continues to push into natural areas. Despite the gravity of the situation awareness is spreading, and ecological art is well suited to addressing the issues involved.

As a nature lover, I think I always had the general sense that life is happening under rotten logs and in hollow trees, but never much more than that. Once I began studying ecology and learned about the true importance of dead wood in the ecosystem and its rapid decline worldwide, I felt compelled to advocate on its behalf. My approach so

Robert Haskell, *Sacred Objects*, 2022, bronze, decaying wood, 2 × 2 × 2 inch

far has been to physically protect pieces of dead wood from removal by surrounding them with sculptures. Using art to draw attention and protect dead trees sends a clear message that they are valuable and worthy of care. In *Sacred Objects (2022)*, I made a series of sculptures with precious materials and religious motifs and attached them to pieces of dead wood, protecting them from removal. These sculptures show a special reverence for the pieces of dead wood they attach to, inviting viewers to wonder why pieces of dead wood might deserve this treatment. The social and emotional significance the sculptures signify probably is a greater source of protection than the physical shielding of the sculptures themselves. I also want viewers to reconsider their aesthetic conception of dead wood by looking at it in a fine art context, hopefully allowing the inherent beauty of dead wood to be taken in.

The next iteration of this effort was *Dead Wood Is Good (2023)*, an ecological sculpture installation located on the grounds of the George B. Dorr Museum of Natural History at the College of the Atlantic in Bar Harbor, Maine. When a large scotch pine tree in front of the museum had to be killed for the installation of a ramp, I proposed to keep the tree in place rather than destroying it in a woodchipper. The sculpture consists of two large steel spirals surrounding the snag, physically and metaphorically protecting it. Brightly colored steel animals are attached to the spirals depicting the saproxylic organisms who will eventually inhabit the tree. There are over 120 organisms depicted, allowing viewers to visually absorb the vast diversity of the saproxylic ecosystem. Through signage and other materials, this project is explicitly educating viewers about dead wood, rather than being a purely aesthetic and practical intervention as the last piece had been. A bed of native flowers, shrubs, and ground covers surround the sculpture, replacing the usual turf grass landscaping. Plants were chosen based on saproxylic organisms that are known to utilize nectar and pollen at various life stages. The project was completed with help from College of the Atlantic students, and was funded by Design Group Collaborative in Ellsworth, Maine, with supporting funds from the College of the Atlantic.

Ecological art that seeks to educate and change perceptions of dead wood can have a tremendous positive impact on these misunderstood habitats. I've given examples of how I'm approaching this endeavor, but the avenues for exploration in this area are endless and full of potential. Cultural attitudes towards nature are changing, and ecological artists have a role to play, especially where beauty is concerned. If we can show the beauty of the dead wood ecosystem in all its many facets, maybe we can bring it with us into the next geological epoch.

Artist Index

Luciana Abait

154

Transverse Ranges, Coastal Plain, Pacific Mountain System (CA, USA)

The series On the Verge presents photographs of two sites that are crucial in water allocation for Western states. Lake Powell is a water reservoir in Arizona that is drying up at an alarming rate due to climate change, and Glen Canyon Dam contributes to the water allocation from the Colorado River to millions of people across the West. Seen from a distance, the landscapes around these areas and their surroundings appear to be idyllic and are reminiscent of 18th Century English landscape paintings. But upon closer viewing one sees that not everything is a utopia. A garbage dumpster, a parking lot made of asphalt, structures such as a water pump; these details highlight how the human imprint interrupts the beauty of the natural world and acts as a reminder of the power of human influence. I use photography to tell the story of human intervention and its impact on our natural resources. lucianaabait.com

Mary Babcock

108

Hawaiian-Emperor Seamount Chain, Pacific Plate (HI, USA)

Hydrophilia is a series of tapestries woven from refuse: abandoned fishing nets and lines previously contaminating our interconnected waterways. Works are titled after latitudes—geographical lines of connection—traveling through and beyond sites of particular ecological vulnerability. *11° 4′ 50″ N* references the Castle Bravo crater in the Republic of the Marshall Islands (RMI) and marks the striking resilience of ecosystems that are nevertheless dangerously threatened by warming seas. In 1954, the US tested the world's largest nuclear bomb over Bikini Atoll, RMI 100x larger than that used to destroy Hiroshima and Nagasaki, leaving a gigantic sunken crater and a warship graveyard. At depths of over 180 feet, well below the ocean warming danger zone, these nuked ships have become sites of unexpected coral biodiversity. This regeneration offers hope regarding the oceanic resilience, yet warns us of the dangers of climate change—a threat even more dire than nuclear blasts. marybabcock.com

SE Bachinger

122

Valley and Ridge, Appalachian Highlands (NY, USA)

*Anthropo|Scape*s are intimate encounters with untouchable territories of toxic remediation. The series takes a close look of a single site: a plastic coated pile of slag, asbestos and tainted earths of remediated industrial waste. Imagery of a plastic-wrapped, highly toxic glacial landscape emerges in the close-up gaze. What's revealed in the waste piles of toxic extraction regimes are the very landscapes it is rapidly destroying. Anthropo|Scapes were taken at brownfield site in Troy, New York, along the Muhheakantuck (Hudson River). New man-made landscapes take form, shaped from waste from one of the country's largest early iron-works and subsequent industries that followed, replacing the once forested land along the river. In a city pivotal to the Industrial Revolution, the remnants of it's past continue to haunt the present shaping of the Anthropocene—a stark reminder of where we are heading if we continue our extractive practices in the name of "progress." sebachinger.com

Katrina Bello

80

Valley and Ridge Province, Appalachian Highlands (NJ, USA)

My drawing *Terra Niobrara* is about the ancient warm shallow seas that used to cover the Mojave desert in Nevada that I often visit. The references that I used to make the drawing are my photographs of fossiliferous limestone rocks encountered in the desert foothills in Nevada. In the video titled *Sky Into Stone*, the video shown over a stone is slag washed up on the shores of Eastport, Maine, likely remnants from the several industries that were located in the area's coast. The video shown over the stone is footage of the waters of the Bay of Fundy, and inlet of the Atlantic Ocean. Both works are part of a series of drawings and videos about the world's oceans: their beginnings, what oceans are subjected through environmentally and politically (topics on pollution, migration and territorial disputes), and also oceans as a source wonder, awe, beauty and inspiration. katrinabello.com

Barbara Boissevain

37

Transverse Ranges, Pacific Border, Pacific Mountain System (CA, USA)

The San Francisco Bay Area is home to one of the oldest and densest urban settlements in the American West. Since the mid 1800's settlers and industrial mining operations were drawn to this region to exploit natural deposits of gold, quicksilver (mercury) and salt. I began exploring the subject of extraction by photographing the Lehigh Hanson Cement factory, located only two miles from my childhood home in Cupertino, CA. The cement extracted from this site is used to produce the tremendous infrastructure needed to sustain Silicon Valley's relentless growth. A byproduct of this factory is toxic waste polluting the Stevens Creek Watershed, carrying contaminants all the way to the San Francisco Bay, a metropolitan region with over 7 million inhabitants. In my series "Salt of the Earth," I took aerial shots of the industrial salt ponds characterized by environmentalists as having taken away the lungs of the Bay. barbaraboissevain.com

Kellie Bornhoft

53

Great Basin, Intermontane Plateaus (UT, USA)

Buried beneath one ton of sand, six speakers pulsate as they amplify a live feed of local seismic activity. My work *Tremors*, synthesizes seismograph data into sound waves using an open-source ObsPy code and a Max patcher. Viewers are invited to traverse the sand mound to feel the magnified grumbling vibrations of the Earth's movements. The tremors vary between the speakers as they source from separate regional seismographs. Handmade porcelain rock sculptures are mixed into the sand. They are composed of different clay bodies wedged

with pigment stains and high-fired raw. A video plays across two monitors with white text contrasting animated colored backgrounds. As a chance-operation poem, the words borrowed from geology texts cycle on each monitor at differing speeds to create an endless rotation of combinations. The work reminds us that this moving-shaking planet we live on is a body in flux. The ground we share is never static. kelliebornhoft.com

Regina Bos

176

Piedmont,
Appalachian Highlands (NC, USA)

My work is deeply influenced by themes of transformation, growth, and decay, observed in the natural world. Nature's unending cycles of life and intricate patterns help shape my artistic expression. I seek to create art that is not only unique and unusual but also a direct, tangible experience that leaves a lasting impression on the viewer. Mixed-media sculpture provides me with a sense of freedom. It's a three-dimensional canvas that allows me to express my connection to nature. I layer and carve wax, mold foam, shape metal armatures, create and sew textiles, and produce colors and dyes from natural elements. I experiment with combining all these parts until the piece begins to find its balance and tell its own story. Each sculpture stands as a testament to the endless changes in nature and the transformative power of art. reginabos.com

Emily Budd

143

Basin and Range Province,
Intermontane Plateaus (NV, USA)

The Atlantis of Lake Mead is a building that was submerged underwater for decades and is from a series of photographs accompanying my essay. Following the conceptual map of Robert Smithson's *A Tour of the Monuments of Passaic, New Jersey*, my essay *Cruising the Monuments of the Outskirts of Las Vegas* tied to the elements of land and extraction in the Las Vegas valley and surrounding Mojave Desert. Described locally as Nevada's "Atlantis," the town of St. Thomas was drowned by Lake Mead when the Hoover Dam was built on the Colorado River in the 1930s. Ruins of the town have re-emerged several times since then, now lying entirely exposed due to droughts caused by climate change and colonial impacts. Seeking transformation after abandonment through the lens of expanded cruising culture and queer renewal, I build on Smithson's references to time and explore a form of freedom gifted by the possibilities of entropy. emilybudd.com

E Tyler Burton

115

Transverse Ranges, Pacific Border,
Pacific Mountain System (CA, USA)

Chino Canyon is part of an ongoing project Fossils of the Future, which began in 2016. The series is driven by my passion for the natural world and our profound impact on it. As a sculptor and photographer, I am dedicated to creating work that invites contemplation and fosters a deeper appreciation for the environment. Inspired by Abstract Expressionism and Land Art, my work reflects the consequences of overconsumption and the urgency of preserving nature in the Anthropocene. Towering concrete columns, reminiscent of future archaeological core samples of the earth, serve as the foundation. These columns, filled with an amalgamation of donated or found plastic, recycled paint, concrete, plaster, and resin windows that reveal plastic detritus, invite viewers to interact with the artwork and the environmental message it carries. Each monolith becomes a microcosm, encapsulating the layers of human impact on the Earth over time, symbolizing our collective tendency to overlook the repercussions of single-use plastics and excessive consumerism. etylerburton.com

Renata Buziak

99

Clarence-Moreton Basin,
Wandilla Province (QLD, AUS)

Soil erosion caused by human activity on land, which includes land clearing management and overgrazing, leads to significant acceleration in creating gullies, or trenches that allow water flow to wash away soil. Gullying increases the amounts of sediment deposits that negatively impact the Great Barrier Reef. I created biochrome images using samples collected by soil scientists from grazing properties eroded by gullies in the Bowen River Catchment in Queensland Australia, which are a major cause of sediment over the Reef. Various soil types and their components have different impacts on the environment. The impact of gully erosion changed the landscape and cannot be undone, however there is always hope and the biochrome images show soils from eroded sites as living entities, and their diverse visual, tactile and behavioural qualities. Through art-science projects we can bring awareness to the significance of lifegiving soil and increase care for soil and its health. renatabuziak.com

Arminée Chahbazian

170

California Coast Ranges,
Pacific Border,
Pacific Mountain System (CA, USA)

Stones can speak. Over time, in walking through various landscapes, I have collected small rocks that serve to evoke memories of each place. My process is to carefully inlay a collected rock into a receiving stone whose surface is subtly carved to reveal a fluid backdrop. A deliberate dialogue ensues from this pairing, one based on a rhythmic relationship between two geologic elements quietly colliding. My compositional decisions are greatly informed by natural phenomena; light, topography, water, wind and fire are all factors in developing my forms and in suggesting abstracted content. The intention is to create compositions that retain a primal memory while offering potential narratives that shift with light, time and orientation. It's my way of re-animating the material which I see as a densely compressed artifact of earthly life, and to capture a living memory (a human past time) within the relative timeless layers of illuminated stone. arminee.com

Julianne Clark

150

California Coast Ranges,
Pacific Border,
Pacific Mountain System (CA, USA)

Layers is from an ongoing body of work entitled After Maxine, through which I combine my family archive, created images, videos, and installations to create intergenerational conversations about land and family in the American South. I tell stories about family and the landscape from a queer, female-bodied perspective. I employ the visual language of archiving and natural history to question degenerative rela-tionships with the land, and how those relationships might connect to family and community trauma. I subvert the tradition of institutional collecting by creating a visual archive—an intimate narrative about familial connections to the land. This fabricated archive reveals hidden queer histories, both real and imagined. I explore the constructs of landscape through photography, destabilizing the traditionally masculine framework of landscape photographic images. julianneclark.com

Kyra Clegg

81

Central Lowlands,
Fife and Angus Geology (FIF, SCT)

I am a Scottish visual artist whose practice includes mixed media installations and artists moving image. My inspiration and research are embodied in the Scottish environment, finding connections with the landforms and habitats of Scotland. 10,000 years ago at the end of the last ice age, the Tay Valley where I live was created by a glacier—connecting a landscape of the deep past with the present. My film *Ghosts* looks at fossils, the ancient remains of plants and animals turned to stone, in relation to present day climate change and the damage being done by our impact on the physical environment. Fossils and deep time show that change is a forever feature of Earth. The present is a transitory place forever changing. At this tipping point in Earth's history can we use our understanding of Earth's transient past to change the narrative and decide the ghosts that we will leave behind in deep time? kyclegg.co.uk

Valerie Constantino

104

Central Valley, Pacific Border,
Pacific Mountain System (CA, USA)

The recent pandemic with global fatalities of nearly 7 million, shone a particularly blinding light on our shared vulnerabilities. It also brought the gloom of isolation into focus as sheltering-in-place mandates prohibited in-person contact. These conditions warned of the earth's foundering, brought about by the ongoing pollution and depletion of its resources. The accelerated rate of species extinction is of the same cause and effect. We are intricately linked to the non-human realm and as each species recedes, aspects of our physical and metaphysical selves fade. Our sense of connec-tedness evaporates too, and we are ever more on our own. We feel anguish at the suffering of oil-soaked and net-snared species. And we also feel the soundless vacancy that enfolds us as they slip away. This epochal moment renders these certainties, as it calls for our radical action to preserve all life on earth. valerieconstantino.net

Betsy Damon

120

Piedmont,
Appalachian Highlands (NY, USA)

The series Depending on the Weather was created in response to unpredictable natural phenomenon and feelings of dislocation. Fire and water are the two elements that play together in this creation as they always have from the beginning of time. Our world's living systems are endlessly humbling in their complexity. Through my art, I reveal biodiversity's enormity and center water as the foundation to all life. In my journey to understand water, my partner is science and my driving purpose is curiosity. I look through the mist to examine the vast expanse of interconnected living systems. Mining destroys water and forests, accelerating flooding and fires. How we extract can impact the living system, earth, for centuries. We are in a time of a great vanishing that opens new unimaginable possibilities. We are part of this constantly generative existence forever transforming in an infinite cosmos. betsydamon.com

Lauren Davies

96

Central Lowland,
Interior Plains (OH, USA)

My work *Cascade* utilizes photo-graphs that I have taken in nearby Youngstown, Ohio. Located in the Mahoning Valley, Youngstown is one of several regional towns long known for industrial production involving iron, steel, and car manu-facturing. The Mahoning River became the conduit for industrial transportation of goods and for manufacturing processes that in-volved the cooling of equipment and use as a dumping site for scalding water that included industrial waste and chemicals. By the 1960's many Rust Belt industries had faltered, leaving communities like Youngstown economically devastated and the land and river contaminated with heavy metals, oils, cyanide, ammonia, various toxins, and other pollutants. The Mahoning River flows into the Ohio River, then into the Mississippi River and then into the Gulf of Mexico. What happens in Youngstown, doesn't simply stay in Youngstown. laurendaviesprojects.com

Dennis DeHart

83

Central Lowland,
Interior Plains (OH, USA)

I am compelled by deep time and the relative incomprehensibility we have, of truly understanding geologic change. I am also interested in the richness of an ecologically world view, focused on the importance of interdependency and how everything is interconnected. *Exotic Terrane* includes images of fossilzed sea life found in Hells Canyon, which is 450 miles inland from the Pacific Ocean. The fossils are approximately 200 million years old, and part of the collection housed in the University of Montana's Geosciences department. The specific images are part of the larger project, Hells

Canyon: An Exotic Terrane (an exotic terrane terrain is a piece of the Earth's crust that has merged with another landmass and has a separate and entirely different geologic history) which is a transdisciplinary artist project, centered around Hells Canyon Wilderness / National Recreation Area and adjacent environs. dennisdehart.com

Eliza Evans

68

Piedmont,
Appalachian Highlands (NY, USA)

The United States is the only country in the world where the minerals in geological layers hundreds or thousands of feet below the surface are private property. 8 to 12 million mineral right holders, including myself, are directly implicated in the extraction of fossil fuel through fracking. As the U.S. seeks to onshore minerals now sources elsewhere (such as lithium) through domestic mining, private property owners can potentially be a bulwark against the most egregious consequences of unfettered extraction and a support for frontline communities. All the Way to Hell is an experiment—a legally fastidious intervention that pushes the logic of private property in the U.S. to the point where it breaks down. The project democratizes an fossil fuel asset reserve that should have been a commons to begin with. eevans.net

Stephanie Garon

61

Piedmont,
Coastal Plain (MD, USA)

Gold Rush showcases 1,000 pounds of extracted mine cores from Passamaquoddy land/Maine, steel I-beams, and a scrolling ticker display of the latest stock market metal prices. At the intersection of scientific, cultural, and historical perspectives, I have worked with teams of scientists, indigenous tribes, geologists, lawyers, activists, and community members on issues surrounding a mine in Maine /Passamaquoddy land. In support of the Maine Clean Water campaign, the artwork considers the environmental implications of mining as five surrounding towns and two reservations depend upon conserving the land for their economy, health, & environment. The commodification of the land, symbolized by the ticker display, emphasizes the urgency of humanity's land claim and usage. garonstudio.com

PlantBot Genetics , DesChene+ Schmuki

56

Greenville Slope,
Appalachian Piedmont (AL, USA)

Lithium mining has become increasingly popular due to the high demand for this metal in smartphones and other electronic equipment. Although it has been embraced as an environmentally friendly alternative to traditional energy sources, its production process still causes ecological destruction. Ceramic tableaus from clay sourced from the backyard and discarded porcelain figurines are finished with highly textured glazes containing lithium oxide from these same mines. Figures set into these ruined, unstable, geomorphic landscapes depict this industry's impact on nature, from the contamination of air, land, and waterways with chemicals and heavy metals to deforestation and wildlife destruction. By representing these issues in a tangible form, *Behind the Tailings*, we are encouraged to learn more about how our choices impact the environment and to find solutions before more ecological damage is done. monsantra.com

Bill Gilbert

116

Rio Grande Rift Valley,
Intermontane Plateaus (NM, USA)

The Anaya Springs area lies three miles north and east of the town of Cerrillos on Ancestral Puebloan land, in Northern New Mexico. For the past 20 years, as a shared practice, Anne Nelson and Bill Gilbert have built over 500 check dams to hold water and soil at the site, creating a multitude of small incubators for grassland restoration. Working with rocks readily at hand we've made a series of interventions in the hopes that through endless reiteration our effort will have an effect. Change has been incremental, but continuous. Silt fills in behind the dams, grass germinates behind and in between rocks. Packrats build homes in the gathered stones. Cactus, wildflowers and native shrubs sprout, gain a foothold and grow. Water infiltrates and then seeps slowly from the dams after rains. What are the chances the springs return? Only time will tell. In the meantime, we keep building.Collaborators: Anne Nelson, Aimee Stewart, Cedra Wood, Charlie Bettigole, Lynn Grimes.500dams.com

Lawrence Gipe

35

Basin and Range,
Intermontane Plateaus (AZ, USA)

Since the late-1980's, I've interrogated the visual rhetoric of power, propaganda and the impact of "progress" through paintings and installations. My latest series, the Russian Drone Paintings, employs the visual style of epic landscapes from the 19th Century in a reference to the Industrial Revolution—the historical origin of all our ecological peril. The images in the series, however, are sourced from present-day contexts, based on screenshots of drone footage posted between 2018-2022 from the (now-censored) RT news service run by the Russian government. This Series engages issues like surveillance, climate change, and the Anthropocene, captured through the autocratic lens of America's geo-political "adversary," in sweeping vistas of extraction mines, and gas craters, ghost towns, cities abandoned to radioactivity, bombardments, and other traumatic evidence of that nation's relentless and unregulated intervention into Nature. Mir Mine is an open pit diamond mine located in Mirny, Sakha Republic. lawrencegipe.com

Helen Glazer

84

Piedmont Plateau,
Piedmont Upland Section (MD, USA)

I use photography as a means of revealing the forces that shape landscapes, both natural processes and the impact of human activity—the infrastructure we build and other deci-

sions that transform environments. *Channels Blasted in Rock* is from a book project in progress about environmental changes to the formerly uninhabited tundra in Kangerlussuaq, Greenland, initiated by the construction and operation of a US Force Air Base there from 1941 to 1992. In summer, meltwater from the Greenland ice cap mixed with fine glacial silt travels downriver and into the Kangerlussuaq Fjord through two channels blasted into the rock beneath the town bridge. The channels prevent flooding of nearby buildings but also allow more glacial silt to flow into the fjord which has made the waters shallower. Just past the bridge are broad patches of quicksand. Climate change has exacerbated the situation by sending more water and silt into the fjord. helenglazer.com

Kim V. Goldsmith

168

Western Slopes, Nandewar
(NSW, AUS)

The ancient landscapes of regional Southeastern Australia have been undergoing geological transformations for millennia. However, the impact of change has never been greater than the last 230 plus years since shiploads of British convicts arrived on the east coast of the country in 1788. The soundscape composition, *Wambuul bila* is primarily a narrative that takes a winding path through traditional Wiradjuri lands seized by European colonisers in the early 1820s, changing the landscape's form, function and sounds forever. Signature sounds of the river today are defined by its degraded state and the many built stru-ctures that cross and contain her waters—structures of human convenience and extraction for towns, farming, mining, and industry. The very structures that now define the river's sounds will also shape her future. kvgoldsmithart.com

Rachel Guardiola

110

Piedmont,
Appalachian Highlands (NY, USA)

Into the Zone is a cinematic film that immerses the audience in a topographic panorama that takes place after the Holocene Epoch. The film starts and ends with a curio cabinet as the entry and exit point of travel, reminiscent of children's fairytales. Footage montages original and found film that has been hand developed and processed with experimental darkroom techniques. Sound and image contemplate the manner in which humans collect, construct, and become natural history. Included in an installation space, viewers alternate between looking out at a projected life size landscape and navigating a faux museum. Silhouettes are cast upon and intermingle with the film projection as it is dispersed around the room. The film switches between explorer, archivist, and an unknown entity uncovering a large scale geologic event in which various species including humans become fossil fragments of inspection. rachelguardiola.com

Tom Hansell

112

Blue Ridge Mountains,
Appalachian Highlands (NC, USA)

The human body is two thirds water. In the Anthropocene, humans have changed the physical composition of water. For example, in the Ohio River watershed, fracked gas flows to cracker plants that produce polyethylene plastic for shopping bags and other products. Gravity and entropy pull the polyethylene from shopping bags and fleece vests into streams and rivers. Five million people depend on this watershed, yet microplastics have been found in every surface water sample. To create *The Trash Trout Motion Picture Show*, I worked with riverkeepers to collect plastic from headwaters streams in the Appalachian Mountains. During public workshops, participants taped the plastic from the river on to 16mm film strips. The resulting film is projected to a live soundtrack performed by traditional Appalachian musicians and dancers. This project combines experimental filmmaking with traditional music, dance, and public workshops to start conversations about reducing our dependence on plastics. tomhansell.net

Robert Haskell

189

New England,
Appalachian Highlands (ME, USA)

How do aesthetics shape the landscapes we inhabit? We see the effects of waste and resource extraction scarring the planet, but what about the things that we don't see? What about the elements of nature that have been systematically destroyed because of widely held opinions that they are ugly? While aesthetic attitudes shape our landscape in many ways, the removal of dead trees in particular is causing ecological damage that will reverberate through the eons if left unchecked. *Dead Wood*, also the title of my work, is reflexively removed and destroyed all over the world for aesthetic reasons, with safety concerns and misconceptions often providing post-hoc rationales. Fortunately, damage that is done in the name of aesthetics can be fought using the tools of ecological art. I propose using sculpture to protect dead wood in-situ. Aesthetic conceptions around dead wood can be directly influenced by highlighting the inherent beauty of dead trees, both visually and conceptually. robertjameshaskell.com

Alexander Heilner

100

Piedmont Plateau,
Piedmont Upland Section (MD, USA)

For more than forty years, the silt "Dominy Formation" in the Colorado River near Hite, Utah, was fully submerged under Lake Powell. Here, the river slowed and dropped its enormous cargo of silt from Colorado and Wyoming into the reservoir. As drought and overuse of water allotments have caused the lake to recede southward, the river is once again flowing here. But it must cut a renewed path through decades of mud and silt, some of which is more than 100 feet deep. These unstable deposits are colloquially named for Floyd Dominy, the Bureau of Reclamation commissioner who spearheaded the construction of Glen Canyon Dam in the 1960s. Much of my photographic practice involves aerial depictions of the land and

human incursions within it. This image is selected from Draining the Colorado, an expansive, long term project in which I am cataloging the diminishment of water throughout the Colorado River Basin. heilner.net

Harriet Hellman

172

Thames Valley Flood Plain,
London Basin (UK)

Deep Time II was made on location in response to the geology and power of the Atlantic coastline on the North Coast of Devon in the UK. The series, Deep Time, reflects my thoughts around the longevity of human time versus that of deep time and the ecology of the Anthropocene. The process of layering, tearing and building with clay creates a visceral response in me, which is both immediate, performative and meditative. The layered, cracked and textured surfaces are evocative of somewhere 'other' and yet firmly set in the present. Left on the shoreline, the layered clays erode and transform as the unfired Sculptures are affected by the tide. I am reflecting on the precariousness of the human condition, the fragility of the earth and the detrimental effect of the human on the natural environment. harriethellman.co.uk

Jessica Houston

44

St. Lawrence Lowlands,
Canadian Shield (ON, CAN)

Letter to the Future 3019, is a 1,000-year collaboration with ice and with people across disciplines, including posthumanist philosopher Rosi Braidotti, Inuk leader Okalik Eegeesiak, composer Arvo Pärt and physicist Carlo Rovelli. I have called upon a variety of voices across disciplines to write a handwritten letter to the future. The contributors' letters were placed in a time capsule which was buried in the Dronning Maud Land ice sheet by scientist Alain Hubert, chief operator at The Princess Elisabeth Antarctic Station. It is anticipated that the time capsule will emerge in roughly 1,000 years after being carried by the ice to the sea. Except for the authors themselves, no one from the present has seen the letters. The substances of the planet are vital materials of this work, which asks us to imagine with renewed sensitivity our time and our place in the history of the earth. lettertothefuture.net

Sarah Kanouse

130

Cambridge Argillite, Northern
Appalachians (MA, USA)

The poetic film *Grassland* excavates the stratigraphic layers of geology, ecology, and belief that form a northeastern Colorado landscape. Meditative original footage depicts a seemingly contradictory array of land uses: nature trails, ranches, nuclear missiles, oil fracking, and wind farms exist within a few miles of each other. Locating the grassland in both historic and deep time, the film uses handmade intertitles and collage animations built from archival materials to explore the changing cosmologies, ideologies, human actions, and biological and geological forces that produced the landscape. The haunting, richly textured soundtrack features field recordings, found sounds, and stories of the inextinguishable Indigenous relationship with the land related by Cheyenne artist and elder Gordon Yellowman. Less a documentary than an essay, the film ultimately finds beauty, hope, and anxiety in the scarred, mundane landscape. readysubjects.org

Sant Khalsa

32

Transverse Ranges, Pacific Border,
Pacific Mountain System (CA, USA)

Salt / Water is an ongoing photographic project focused on the Bristol Dry Lake in the Mojave Desert near Amboy, California. The images present an active salt mine with sixty million tons of natural halite (sodium chloride) in reserve, being extracted for industrial use and food products. The site is a constantly changing desert landscape, revealing the human movement of earth and salt, and the infusion of water for the processing of salt. The work is my reflection on time and place, nature and culture, and our consumption of natural resources in addition to my experience of a vast and beautiful, yet complex and fragile eco-system. Creating visual artifacts of my intimate relationship with place is a mindful inquiry. It is my intention to create contemplative spaces where one can sense the subtle and profound connections between themselves, the natural world, and our constructed landscapes. santkhalsa.com

Samantha Lang

127

North Botany Basin,
Greater Sydney Basin (NSW, AUS)

Brown Lake, a body of what looks like tea-stained water is a perched lake, a twenty-thousand-year-old home to plants, insects, and animals and a part-time refuge to humans that sits above a sandstone water aquifer. Sealed by a solid layer of teewah sands it contains three layers of brown, amber and transparent – anoxic, cold and warm – fresh water. As well as being a children's place of laughter, Brown Lake is a female place, an ancestral place, a colonized place, a mined place, a reclaimed place, a hydrologically unpredictable place, and a place that features as the central character of this work. Place as protagonist. Brown Lake as feminine identity. Fractal of the Anthropocene. *Brown Lake* accompanied by a short essay and still photographs, explores non-human approaches to image-making, beyond human-centred ways of picturing, representing and capturing the environment, with the aim of affording the lake an active voice. samanthalang.com.au

Cheryl Leonard

153

California Coast Ranges,
Pacific Border, Pacific Mountain
System (CA, USA)

In 2009, I spent five weeks at Palmer Research Station on Anvers Island off the Western Antarctic Peninsula. Palmer is situated on a sliver of exposed bedrock at the edge of the Marr Ice Piedmont, a vast glacier that enshrouds the island. Like most marine glaciers in the region, the Marr is shrinking, its surface

increasingly fractured by crevasses and its periphery collapsing into the sea. Behind the station the ice has retreated over 400 meters since 1975. Within the Marr's ablation zone (the part of a glacier where there is a net loss of ice mass), I collected sounds from meltwater streams and crevasses. Near the Marr's terminal ice cliffs I recorded icebergs and brash ice. Duetting with these kinetic, ephemeral voices I played Adélie nesting stones and *Last Flight of the Adélie*s, an instrument made with penguin vertebrae. As the region warms, Adélie populations near Palmer are plummeting. allwaysnorth.com

Bonnie Levinthal

178

Piedmont,
Appalachian Highlands (NY, USA)

Strata presents a timeline of sorts, and is inspired by ice and sediment core sampling, various geological formations and stratifications, and topographical patterns. The multi panel installation calls to mind glaciers and various land formations, along with conditions created by global warming and climate change, such as melt water, flooding, and endangered areas that I have indicated by the hot orange-pink color, a color that I associate with an emergent situation. Strata is my interpretation of an organizational structure that considers the Anthropocene. My art is rooted in the exploration and re-presentation of landscape inspired by my travel to isolated northern locations and interprets landscape and place as Image, object, and installation. In the studio, I am continually re(de)fining what landscape is, hopefully creating a context that exists somewhere between the real and the imagined, as observations and memories are combined with my research concerning the environment and other critical issues of our time. bonnielevinthal.com

Christopher Lin

40

Piedmont,
Appalachian Highlands (NY, USA)

Business as Usual engages with research on urban runoff and the chemistry of our surrounding New York Harbor through electrolysis. In this chemically active installation, I was interested in referencing extractive economies, the process of calcification, and boring dystopias. A calcified brain coral waits at a banker's table with a curious set of objects: Sand dollars stacked like coins and a ledger full of markings lit by an aquarium. Within, submerged in a water sample of the New York Harbor, symbolic representations of the city (Statue of Liberty, Freedom Tower, and Empire State Building) function as the cathodes and anodes for electrolysis. As these symbols gradually calcify due to the chemical reaction, the water precipitates various ions like a sepia snow globe, making visible the complex chemistry of our Bay. These precipitates are collected in vials as pigments and turned into ink. Tucked within a bottom drawer is a secret escape into a tiny, lush landscape of mosses. christopherlinstudio.com

Jason Lindsey

74

Central Lowlands,
Interior Plains (IL, USA)

The River Underground confronts the ecological repercussions of large-scale farming, specifically its impact on soil contamination, erosion, and the alteration of hydro-geological systems. Through a series of evocative aerial photographs, this project uncovers the millions of miles of hidden tiles that make up a network of underground rivers flowing beneath farm fields in the Midwest. Though beneficial in curtailing soil erosion and enhancing crop yield, these tiles contribute significantly to a four-fold increase in nitrogen pollution, disrupt water quality, and escalate greenhouse gas emissions in waterways. This work underscores the need for sustainable agricultural practices and prompts a crucial dialogue on the shifting dynamics between human activity, the vegetal and animal worlds, and non-human elements. In doing so, it illuminates how colonial extraction has marked our ecosystems and shaped the new normal in our relationship with the environment. jasonlindsey.art

Nikki Lindt

165

Piedmont,
Appalachian Highlands (NY, USA)

Underground Sound presents a compilation of subterranean acoustic recordings, revealing the hidden sonic ecosystem right beneath our feet. Composed of twenty-five audio-visual vignettes that explore the fabric of underground sound in various locations, the series reveals surprising patterns and musicality. Human Engagement sheds light on the significant impact of human activity on this subterranean world, from thawing permafrost in the Arctic to human-induced sounds in the parks of New York City. Subsurface acoustics can amplify the interdependence of all beings within layered ecosystems while uncovering a surprisingly dramatic world underground. The video *Recording in soil next to trail* captures thundering acoustics that permeate the ground during a stroll in the park. The piece encourages visitors to listen closely and realize the significance of their sonic footprint. By providing visitors the opportunity to experience these subsurface sounds participants can foster a deeper connection with their local ecosystem, emphasizing an integral relationship with nature. nlindt.com

Rosalind Lowry

118

Lava Plateau,
Antrim Plateau (NIR)

In 2022, I undertook a residency at the former town of Epecuen, Argentina. In the 1970's, following long term rainfall in the surrounding hills, an earthen dam broke its hold and the town of Epecuen was consumed by flood waters. Residents had a few days to evacuate before their homes disappeared. Now, 50 years on, the water is receding and the town is being revealed again—including the forest—now dead sea salt soaked trees where my work was created. Based on research on the equivalent function of a beating heart in humans, researchers at Aarhus University discovered that similar to regulating blood pressure, the heartbeat of a tree regulates water pressure. In classical plant physiology,

most transport processes are constant flows but these findings show trees pumping water from roots to branches. *The Heartbeat of Trees* is a dedication to communities and species, surviving and reforming after sustained extraction, commodification and abuse. rosalindlowryartist.com

Sara Mast

162

Northern Great Plains,
Interior Plains (MT, USA)

In nature, there is no such thing as waste. Nature recycles and repurposes everything into energy, fuel and building material for new life. We should stop lamenting our carbon footprint, reject robotic solutions to sorting our trash, and instead emulate the state of the biosphere in which the concept of waste does not exist. Plasma gasification technology approaches the first principle of a truly sustainable world—to live in accord with nature's laws by replicating the energy-producing powers of the sun to return all waste, from plastic bottles to car bodies, to its molecular structure. Emissions register below the California EPA standards (zero dioxins and furans released into the atmosphere) in a closed loop system. The PEM® (plasma enhanced melter) glass in my work embodies a profound paradigm shift in the use of advanced technology to keep waste out of landfills and greenhouse gases out of the air. saramast.com

Nitin Mukul

136

Piedmont,
Appalachian Highlands (NY, USA)

Heat Maps is a new chapter in my series of durational paintings. A "'durational painting" begins by layering paint in sheets of ice, freezing each layer of paint and material so that they accumulate layers of color and texture. Placing the frozen mass outside, it melts in accord with the weather conditions, and the process is filmed. *Heat Maps (Winter Solstice 2021)* collapses space across the planet by engaging atmospheric conditions of light, temperature and gravity in the painting, and incidental environmental sound. Both were recorded simultaneously in Hyderabad (sound) and New York City (visual) on 12/21/21, the shortest day of that year, and first day of winter. The outcome is a meditative and profound work of abstraction generated as a collaborative event created remotely by the two artists. The painted form that unfolds in real-time implicates local climate conditions and globe spanning empirical data as a catalyst in the finished piece. nitinmukul.com

Mia Mulvey

156

Colorado Piedmont,
Interior Plains (CO, USA)

My work explores issues of remoteness, climate, and geological/ecological time as evidenced by the landscape through such forms as ancient trees, ice, and geology. Utilizing field research in the context of collected landscapes, mapping, and materiality, I am interested in the ability of memory to be bound in the land through layers and forms. My series The Mobility of Geology is linked to time and an experience of place…to processes still unfolding. Throughout deep time, geology itself has been moving and changing its location around the globe. *Valley of Fires* explores the potential of non-human communication across time at rates faster than the slow transformation of geologic time. Using the human body as a host for mobility across landscapes, this rock, cast from one residing in Colorado's Rocky Mountains, exists as a replica with abilities to form dialogues between landscapes. Utilizing acoustic horns as both receivers and conveyors of intangible knowledge, what information would this mass of earth be able to communicate and understand? miamulvey.com

Annette Nykiel

152

Cardup Group, Darling Scarp,
Yilgarn Craton (WA, AUS)

Dendritic Rhizomes is part of a series of ephemeral works that find echoes amongst the braided patterns of creeks and the complex multi-organism structures of plant roots. These site-specific works explore the interconnections between water, the multispecies organisms loosely known as plants and the soils that they actively create. The temporality of the work a reminder of non-human time scales and the precarity of soils. Land clearing not only exposes the soil to weathering and erosion but removes the native plants and their roots and mycorrhiza that actively form soil in southern Western Australia. The hydrology is also affected, salt may rises to the surface threatening ecologies and irrevocably changing the landscape. annette-nykiel-artist.com

(p)Art of the Biomass

27

Baltic Shield,
Svecofennian Domain (STH, SWE)

The Plantationocene Monument, a piece of climate fiction, was written together with Dr. Eléonore Fauré, and stems from research and field visits to an actual artificial island outside the city of Landskrona in Sweden, called Gipsön. The island exists because synthetic fertilizers exist. As a readymade sculpture created from phosphogypsum it stands as a monument over the future optimism of yesteryear, when the green revolution set out to feed the world. It also testifies to the dark ecologies formed through modern progress that sustains life in privileged places. Through declaring it a Plantationocene monument, we wish to attend to a naturalcultural her-itage that bear witness, as suggested by Donna Haraway and Anna Tsing, to the agro-industrial impact and colonial and exploitative legacy that radically have shaped lands, societies, and communities. While grounded in historical and current events, our fabulation is an attempt to collectively imagining im/possible futures where this toxic deposit has become a ceremonial site for grief and reconnection. partofthebiomass.se

Carol Padberg

42

Rio Grande Rift Valley,
Intermontane Plateaus (NM, USA)

How do you develop a relationship with a local mountain that has been

devastated by mining? In my series Questa, I experiment with three strategies. I take frequent walks on the mountain to listen, observe and make offerings; I write letters to the mountain as we evolve our relationship; and I make paper weavings that bring together the letters with drone ortho-imagery of daily changes at the Questa Superfund Site. The resulting series integrates textile magick with high resolution surveying technologies. How can I metabolize the violences of modern life? What can I learn from this superfund site, where the technologies of extraction are being used to try to re-engineer a healthy mountain? The diptychs present weavings on the left that show the changes in the site. On the right a letter and the mining scar are combined. These twin weavings chronicle one mountain and one person in flux, together. carolpadberg.com

Marguerite Perret

175

Flint Hills,
Central Lowlands (KS, USA)

Transmutation is an old word often associated with alchemy (lead into gold), but it is also an expression for changing one species into another. In my series Transmutation Shipwreck, cast porcelain life vests are paired with photographic images, video, and text to create a narrative around the ecological impact of the profusion of human manufactured substances which have entered and become part of the ecosystem. Encrusted with fungal mycelia, zebra mussels, leech-like creatures, suggestions of biofilms and populated with other speculative macro and microscopic transplants and colonizers, they are 'transmuted,' transformed, changing from one nature into another. The 'species,' represented are rooted in the world of trade and mass consumption, including casts of the many forms of plastics. Currently, species are going extinct at a rate thousands of times higher than normal declines due to anthropogenic environmental impact. With less than 10% of plastics recycled annually, the plastics of today will outlast many species. margueriteperret.com

Alan Petersen

59

Colorado Plateau,
Intermontane Plateaus (AZ, USA)

Grand Canyon is one of Earth's greatest landscapes, visited by millions of people every year. Ironically, the region harbors some of the richest uranium deposits in the United States, located in fascinating geological structures called breccia pipes. More than 1,200 breccia pipes are found within Grand Canyon and the neighboring region. My series of drawings, Journeys in Search of Grand Canyon Uranium, documents these subtle and highly nuanced features, some of which lie within yards of trails that visitors use daily. Others are exquisitely remote and I visit them by hiking and on my mountain bike. The mining of uranium has left a toxic wake of health issues and social and environmental destruction in the American Southwest where it has been mined over the past sixty years. Grand Canyon is sacred to the Indigenous people of the region and the potential of future mining threatens the water supplies of the Havasupai people and the Colorado River itself. apetersenpaintings.com

Perdita Phillips

62

Swan Coastal Plain,
Perth Basin (WA, AUS)

The artwork "Wheatbelt anticipatory archive III" grapples with the difficulties of lived experience of settler privilege in an ever-present geologic world. It uses the technique of printing over stabilised soil on paper. Each print shows individual images from a collection of over 5500 late 1950s or early 1960s photographs of individual houses in the Wheatbelt of Western Australia. Taken from a plane, they are an archive made by humans, for humans. Yet it delves into more-than-human time: in what way can the aerial eye of settler colonialism be unsettling into a more ecological vision? In some images, earth overwhelms the representations of home and the taming of the land. In others, it threatens to bring down lightning and dust storm onto the houses and lives contained in these triumphant yet mundane documents of settler colonialism, alluding to land clearing and soil loss. The powdered soils of Dryandra form a material link between the represented landscapes and the Earth. perditaphillips.com

Susana Soares Pinto

64

Iberian Peninsula (OPO, PT)

What is the challenge, in our time, before the socio-economic tendencies and those of the Earth system? Will it not be a change in the system in such a transformative, persistent and adaptable way that it forces us to develop a new logic that is challenging and nonexistent? Think like a bird … pick up plastic debris on the beach and do taxonomy with them!

think as a bird
search for meteors on the ground
time is passing by
how to bend curves?
imagine a highway without guiding lines
with humans making cakes
building ghost towns
digging open pit mines like children do when playing with sand
living within an autophagic society
thoughts are like clouds, they pass by
do assemblages with differentiated bodies and like Spinoza thinks, imagine the very great number of extensive parts
catch plastic objects from the sea side and do taxonomy with them
catch plastic objects from the sea side and do taxonomy with them
develop a cosmic conscience.
susanasoarespinto.eu

Jill Price

72

The Laurentian Trough,
Canadian Shield (ONT, CA)

Concrete, the most abundant anthropogenic sedimentary rock on the planet, consists of aggregates, water, and cement; a hazardous, chemical compound comprised of Lime , Silica, Alumina, Magnesia, Iron oxide, Calcium sulphate, Sulfur trioxide, and Alkaline. An extension of my research into UN/making as a creative act, *UN/making Concrete* is a collaborative intervention that has

led to the UN/making of an uncared-for concrete planter. Previously a monoculture and receptacle of detritus, I planted seed paper created from deconstructing works generated during my MFA. Prior to planting, I used water-soluble graphite to handwrite my PhD From Unsettling to UN/making to ensure the paper and my call for a culture of UN/making goes back to the land in a good way. As the thesis blooms, the pollinator garden will bring more bio-diversity to the area as well as disrupt the colonial and industrial aesthetics that continue to dominate public and institutional spaces.
jillpricestudios.ca

Walmeri Ribeiro

66

Embasamento cristalino,
Campos Basin (RJ, BR)

You can't touch it, it's in me, it's in us is a video-performance, which brings as central aesthetic-political issue the mineral extractivism and contemporary ways of life. Based on an immersive performative research conducted in areas of coal ore tailings in the hydrographic basin of the Urussanga river, in southern Brazil, as part of the project Sensitive Territories - Goj tỹ Urussanga, we launched ourselves into the field of memory embodied in the poetic construction of an invitation to collective reflection. The unbridled exploitation of natural resources impacts soil, rivers, groundwater, air, and sea. The consequences and sensations are in our bodies, sickened by contamination and suffocated in a systemic context that robs us of our sensibilities, exposing us to violence already incorporated in our daily lives and also in our bodies. How to re-sensitize our bodies, creating possible forms of survival amidst the traces and open veins of the Anthropocene?
territoriossensiveis.com

Linda-Marlena Ross

161

St. Lawrence Lowlands,
Laurentian Plateau (QC, CAN)

Rising Waters, The New Cartography references our being adrift as a society. Rudderless. No compass bearing. No GPS. No North or South. Something familiar, recognizable, yet totally unmoored. We find ourselves in an increasingly foreign landscape, adrift from one another and from our own sense of self. Floating Ice Research Stations are oceanographic ice breaker ships, and small, temporary, research settlements built on drifting ice sheets in the high arctic seas. They measure rapidly rising sea levels that impact shorelines and coastal cities worldwide, as ice melts at both Poles at an unprecedented pace. As sea levels continue to rise and we encounter one self-induced destabilizing force after another, we look around ourselves and find isolation. Remote islands within a global archipelago, and only ourselves to blame. My images reflect this state of mind. The themes of destabilization at sea and on land, between the individual and the Built Environment, are motifs that I explore.
linda-marlena.com

Meridel Rubenstein

133

Rio Grande Rift Valley,
Intermontane Plateaus (NM, USA)

Pyroclastic Dance negatives made in 2010 and 2012, were assembled in this recent form to emphasize the way volcanoes redraw the landscape with iron rivers and cinders that fertilize new grass sprouts. They are part of the series Volcano Cycle, which explores deep time with photographic images of volcanoes from Indonesia's Ring of Fire. These evoke earth forces, climate change, and human coevolution. Large-format negatives have been printed digitally on prepared aluminum plates. The metal echoes the deep timbre of the eruptions, as well as the transmutation of materials, minerals, and metals that occur during a volcanic event. After eons of fire and ice and then melt, our Eden emerged. Without the earliest volcanic activity, enough carbon dioxide would not have been released to produce global warming to melt the ice cover. Oxygen could then arise to eventually breathe us into being. Volcanoes offer a window into both our own evolution and participation in global warming.
meridelrubenstein.com

John Sabraw

36

Appalachian Plateau,
Appalachian Highlands (OH, USA)

Iron oxides were crucial in early human migration. They used them as sunscreen and to preserve foods, but also for symbolic applications and communication. In my Chroma series, I work with earth minerals referring to their past while asking questions about their future: I use iron oxides extracted from contemporary pollution. Many abandoned coal mines fill with water which reacts with sulfides and mineral surfaces producing high concentrations of sulfuric acid and iron—called acid mine drainage pollution (AMD). My team created a refining process, by which AMD can continuously be treated, restoring streams to support aquatic life. Iron oxide pigment is recovered in the treatment process and can be sold to offset the clean-up costs. Incorporating these minerals brings an intimacy to the Anthropocene, connecting-the-dots, and hopefully spurring direct action.
johnsabraw.com

Zoë Sadokierski

184

Sydney Basin,
The Great Dividing Range (NSW, AUS)

Persistent Table of Elements is a series of poetic visualisations which compare the quantities of radioactive elements released in the infamous atomic bombings of Nagasaki and Hiroshima in 1945 with the lesser-known nuclear tests at Maralinga, South Australia between 1955 and 1963. Recent surveys at Maralinga have revealed radioactive particles breaking down in the harsh, arid environment and releasing nanoparticles into the ecosystem. Of particular concern is these particles leaching into groundwater, which can be absorbed by plants and more easily inhaled or eaten by animals, including humans. Mushrooms are a visual analogy for nuclear explosions, but also a metaphor for the complexity of human interference in these landscapes: some mushrooms can absorb radioactive isotopes from soil,

suggesting that even if humankind orchestrates a nuclear holocaust, the planet could regenerate without us. Plutonium sits within a larger project titled 'Endgame' which aims to inspire conversations about the persistent legacy of nuclear experiments. zoesadokierski.com

Ashley Diane Saldana 148

Rio Grande Rift Valley,
Intermontane Plateaus (NM, USA)

Language of the Earth began as an experiment—curious to see what would happen to the rocks I collected when fired at a high temperature in the kiln. The first batch, I was shocked by the result to see that some had melted or shifted in color while others barely changed at all. I was interested in a typological way of presenting these rocks as records of time, documenting and dating different moments directly related to walks I had taken. Through my investigative approach of walking, I orient myself in spaces of solitude, attuned to my surroundings while analyzing geological history and its features. These walks sometimes feel like a never ending chase, constantly reaching for the unreachable, but I work to find permanence in my feelings of uncertainty. Repetition of form instills a sense of stability and comfort, a longing for connection to tactile elements held in my memories. ashelydianesaldana.com

Aindreas Scholz 180

Thames Valley Flood Plain,
London Basin (UK)

Using both 19th-century and modern photographic techniques, I aim to innovate in terms of sustainable photographic printing practices and processes considering the emerging climate crisis and to push technical, creative as well as conceptual boundaries. I create images in response to specific sites and my practice concerns the connections between humans, non-humans, nature, and the wider environment. I investigate processes of deep time in terms of geology; and immediate impulses caused by adverse weather phenomena and a warming climate. Recording change is crucial to my practice and I try to make that evident in all my images. I work in collaboration with the elements at each site, whether sea water, rain, or plant specimens. Sunlight, silt, and soil help me create an inner world that connects to my viewers. I like my work to stimulate conversations that I engage with, and that enable me to develop as an individual. aindreasscholz.com

Sue Spaid 86

Central Lowland,
Interior Plains (OH, USA)

Since beginning to teach in 1993, my curatorial work and teaching have been entwined. For example, "Ptyx," which featured eight evocations of speechlessness, engendered a philosophy of silence class. My years spent organizing exhibitions focused on ecological issues has greatly influenced my philosophical thinking. Not only do I privilege environmental justice over social injustice, but I consider hydrological justice prior to climate justice, since boosting environmental wellbeing goes a long way toward showing respect and dignity for all living beings, human and nonhuman alike. Since curating "Action Station: Exploring Open Systems," in 1995 at the then Santa Monica Museum of Art, I have championed experiential artworks that engender immersive, memorable experiences. In fact, my first philosophy monograph, published in 2020, The Philosophy of Curatorial Practice: Between Work and World, privileges the spectator's reception over the curator's presentation. Supporting overlooked and neglected artists as both a curator and art writer remains another top priority. suespaid.info

Anne-Katrin Spiess 166

Piedmont,
Appalachian Highlands (NY, USA)

I create site-specific works that address environmental issue through performance, sculpture, and socially engaged projects that employ direct action. Time spent working in the American West has exposed me to the power of desert landscapes, and the undeniable fact of desertification, a major consequence of climatic forces transforming our planet. In November 2022 the levels of Great Salt Lake were at a historic low. Over several decades water had been diverted from the lake for agriculture and for irrigation of golf courses and lawns. Brine flies and brine shrimp, an important food source for migratory birds, were in dire numbers, endangering millions of birds. Toxic substances found at the bottom of the lake include: antimony, copper, zirconium, lead, and arsenic. *Great Toxic Lake* addresses the sobering reality of drought and is my Sisyphean attempt to water a patch of sod is a subtle commentary on the unquenchable thirst of human expansion in the desert. annekatrin.info

Kala Stein 38

California Coast Ranges,
Pacific Border, Pacific Mountain System (CA, USA)

Atmospheric River is a transformation of a digital photograph into ceramic materials, petrifying one of many recent catastrophic atmospheric events. I used an image of an atmospheric river event on January 4, 2023, captured by the Visible Infrared Imaging Radiometer Suite on the NOAA-20 satellite to make this piece. By rendering the image of an ephemeral moment into a permanent material, this work can be considered a fossil record of a devastating event and shifts a passing weather event to an ever-lasting monument. My work pays homage to Robert Smithson's Spiral Jetty with Atmospheric River. In both works, the spiral acts as a symbol of entropy and of connection with the primordial elements of earth and water. Contradicting Spiral Jetty, which transforms with changing conditions. My work suspends a moment in time, memorializing it as a cautionary omen of *the New Geologic Epoch*. kalastein.com

Lawrence Stevens

60

Colorado Plateau,
Intermontane Plateaus (AZ, USA)

Sustainability of life in the Anthropocene requires that we see and act to improve stewardship of the Earth's aquifers. Groundwater is our last reserve of fresh water and presently supports nearly one quarter of the human population, as well as innumerable fish and wildlife species. Springs emerging from those aquifers are windows into groundwater health and are point-sources of biodiversity - the canary's canary of environmental quality indicators. However, our long-term failure to recognize connectivity between this aquatic underworld and societal well-being has resulted in decline, depletion, and pollution of groundwater and the loss of the springs they once so miraculously supported. Climate change is further reducing groundwater recharge by reducing and more quickly evaporating winter snows. The quiet demise of a source like Buck Spring is an Anthropocene tragedy multiply repeated throughout the world, with dire consequences for humanity's future. springstewardshipinstitute.org

Rainey Straus

182

California Coast Ranges,
Pacific Border, Pacific Mountain System (CA, USA)

Coastal Redwoods once stood from central California to southwestern Oregon across a range of 300 miles. From the 1800s on, these trees were felled for a multitude of uses until only 5% of these astounding beings remain. Extractive clearcutting destabilized the land, reduced water quality, and degraded the habitat for Salmon, Spotted Owls, Red Tree Voles, and Spotted Salamander, to name only a few. Data and statistics can't be felt in facts but rather in the teeming emergent phenomena of the living forest. *Dwellings* express the choreography of life as trees become land, become sky, become mountain, become stream, become fish, and animal. Trees are on the move. This human/forest entangled offering calls to the rights of nature to move humans to know and protect these kindred places before they are lost forever. raineystraus.net

Lauren Bon + Metabolic Studio

76

Transverse Ranges,
Coastal Plain, Pacific Mountain System (CA, USA)

What if we dared to release the mighty Colorado River, allowing its waters to once again flow freely to the Gulf of California? What if the Sierra's snowmelt could reclaim its path to the sea, nurturing the interconnected ecosystems along the way? What if the Great Basin transformed into a harmonious tapestry of interconnected watersheds where humans and other living beings coexisted in a balanced relationship with the life-sustaining water? And what if, amidst this shifting landscape, a new ecological economics emerged—one that prioritizes homeostasis and equilibrium over relentless profit-seeking? In this new geological epoch, we find ourselves confronting the end of life as we have known it; a reckoning with our thoughtless consumption of resources painstakingly formed over millennia and squandered without consideration of replenishment. As we navigate these profound changes, it becomes increasingly clear that we must ask ourselves these vital questions. metabolicstudio.org

Scott Sutton

139

Rio Grande Rift Valley,
Intermontane Plateaus (NM, USA)

My painting *Rio Grande Basin Watershed* was created with locally grown Japanese Indigo from my dye garden in Taos, New Mexico. The use of sustainable sources of color include the elements of sun, air, water, and earth, ultimately giving form to the indigo blue color. The color blue also symbolizes the water and air that are essential to the hydrological cycle giving life to the diversity of ecosystems within the Rio Grande Basin from the headwaters of Colorado and New Mexico, where it eventually flows south down to Texas and Mexico. The painting also includes a map of Japan where Japanese Indigo, Persicaria tinctoria, is originally from. The botanical illustration highlights the plants anatomy from the seed, roots, stems, leaves, and flowers. The leaves contain a pigment called Indican that is converted to the pigment Indoxyl when they are broken down through hydrolysis or reaction with water. scottsuttonart.com

Monika Tobel

78

Thames Valley Flood Plain,
London Basin (UK)

Erractic Rock, A Conversation is part of a multimedia work comprising an image of an erratic rock, along with a sound piece imagining a conversation between the artist and this ancient entity. The rock in question has been my long-term collaborator, since our encounter during a residency in Atina, the mountainous Lazio region of Northern Italy, which culminated in multiple prints, and followed by sound performances. The work is a meditation on the intertwining of all connections that makes up this beautiful planet, through the shared ancestry of minerals, molecules, and atoms that we all made of. I mixed the sound using manipulated field-recordings and found sounds, such as melting glaciers and erupting volcanoes, combined with my own vocals. monikatobel.com

Roberta Trentin

159

Appalachian Plateaus,
Appalachian Highlands (NY, USA)

Since the dawn of the industrial era, extractive practices have drastically transformed our environment and caused habitat loss and degradation that impacted biodiversity *EXTRACTOCENE* pays attention to the landscape and the entanglements of our species with the wealth of what lives around us. With this work we turned to fungi to engage with narratives that are less extractive and more regenerative. How can we pause the frantic disconnection of extractive

living and welcome regenerative thinking, fertile communications, thriving biodiversity, and practices? This piece lives outside the natural cement mines in Rosendale, New York, which stopped operations in 1970. It was inspired by the grief and numbness felt while visiting the mine. The extractive practices that dominated over the landscape for many years echoed a dull sound. What was extracted will never come back, gashes through the rocks will never be sewed back. The minerals are gone, but through fungal entanglement—above and beneath the ground—life can be reclaimed. Robertatrentin.com

Peggy Weil

34

Transverse Ranges,
Coastal Plain, Pacific Mountain System (CA, USA)

Core California is a tapestry of geothermal cores descending 3000 meters beneath the Salton Seabed. The cores are from the Salton Sea Scientific Drilling Project, a 1986 study of high temperature, active geothermal systems. The word tapestry references the multiple geologic, ecologic, economic, and cultural strands forming the complex (his)stories of the Salton Sea Basin. Its fate is steeped in competing interests, past and future: The modern inland lake was formed by a catastrophic engineering failure diverting the Colorado River for agricultural and economic development in 1905. Today, the promise of clean sustainable energy, in the form of geothermal energy and lithium batteries, must be balanced against the realities of resource extraction in an area with a long and storied history of environmental devastation. The intention of the work is contemplative, to focus attention on deep time and deep space critical to our perception of and responsibilities for the environment. pweilstudio.com

Ryland West

46

Piedmont,
Appalachian Highlands (NY, USA)

The Arctic landscape is an awe-inspiring realm of natural architecture, where each contour and crevasse holds decades of environmental history. These structures embody the intricate workings of a diverse geological system that has shaped our planet for millennia. However, humanity has transformed from mere observers to active geologic agents, rendering these once mighty eroders into vulnerable landscapes. We find ourselves in a precarious position being simultaneously dependent on what we've become a catalyst of destruction to. Despite our physical detachment from these remote areas, it is crucial to grasp the profound impact we exert. Through my work, I strive to extract glacier structures, infusing them with vitality. By playing with lighting, I disconnect the ice from its expansive system, inviting viewers to scrutinize and comprehend the environments we are altering. rylandwest.com

Erin Wiersma

163

Flint Hills, Central Lowlands (KS, USA)

Within Flint Hills on the Konza Prairie in Kansas, is one of the few remaining protected grasslands in the world, including both intact and restored tallgrass prairie. A mosaic of over 40 watersheds are treated with controlled burns occurring at varying intervals, to replenish and maintain the ecosystem. Through these forms I explore the prairie's complexity, natural history, climatic vulnerability, and environmental impact. Like a researcher working in tandem with the experimental and conservational burn cycle, I enter the watersheds and work with the scorched remnants; navigating paper through the recently-burned grasslands. Through the drawings a new understanding is formed. When the paper meets earth a new landscape is revealed, evoking an ancient state, when the continent of North America was divided in two by an Interior Sea. The return of the grass but echoing back to the ancient seascape, allowing me to know where I dwell. erinwiersma.com

Anne Yoncha

134

Colorado Piedmont,
Interior Plains (CO, USA)

Peat Quilt sonifies and materializes soil data from post-extraction peatlands in Northern Ostrobothnia, Finland, as part of an ongoing collaboration with restoration scientists. The piece is constructed with handmade paper from post-extraction site plants; locally-dyed embroidery floss; stereo sound based on hyperspectral camera data comparing restored (right) and unrestored (left) soil samples from site; marker, guitar tremolo springs, wire, speakers, and pedal-activated sound system. Hyperspectral images provide information about soil structure invisible to the naked eye, which we've translated into a visual score for the electronic music composition. Because speakers are attached to the "fabric" of the quilt, we hear the sounds of the landscape through the materials of the landscape. Extracted plots have been "replanted" in the quilt with embroidery, the labor of this task an analogue for the labor of Sphagnum moss as it generates peatland. anneyoncha.com

Laura Ahola-Young

101

Idaho Basin and Range,
Snake River Plain (ID, USA)

Iron Formations are rubbings from a band of exposed iron ore that sits near an isolated mine in Soudan, Minnesota. The mine is a popular tourist attraction, and the bands of ore sit in an adjacent woodland. The beauty, strata and age of these bands, echo the formation of the iron ore—when earth existed without oxygen. I am fascinated by the reproduction of the cell—and that a plant cell wall has a rigidity that mammals lack, the existence of a chloroplast and the magic of photosynthesis. My work is an attempt to represent the vegetal and the material as agents of their own, not just as aesthetic objects, to transform the abstract rhetoric of climate change into reality. My ancestors moved from Slovenia, Finland and Italy to Minnesota and I am a daughter and granddaughter of workers in the Iron Range of Minnesota. lauraaholayoung.com

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ecoartspace operates from the unceded lands of the Tewa people in Santa Fe, New Mexico (USA), called O'ghe P'oghe, which means White Shell, Water Place. We want to acknowledge and express gratitude to all Indigenous people who have lived in relation with the earth, including the trees, animals, air, soil and water for thousands of years here on Turtle Island and beyond. We acknowledge that extractive, exploitative colonialism continues to threaten the survival of all species and that ancestral Indigenous Knowledge needs to be recognized and preserved.

"The artworks depicted in *The New Geologic Epoch* delve into intricate power dynamics that locked many people into participating in harmful systems, as well as capacities for action that help envision larger alternatives. They underscore how certain factions and industries have disproportionately contributed to the defining traits of this time, including unrestrained resource extraction, the destruction of habitats, of clean water, and the pervasive pollution that has prolonged social and environmental injustices in areas often called a sacrifice zone, affecting marginalized communities and the natural world."
—Mary Mattingly

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